The Intelligent Surveillance Solution

NUUO Crystal™

User Manual

Ver. 2.1.4.140812.00

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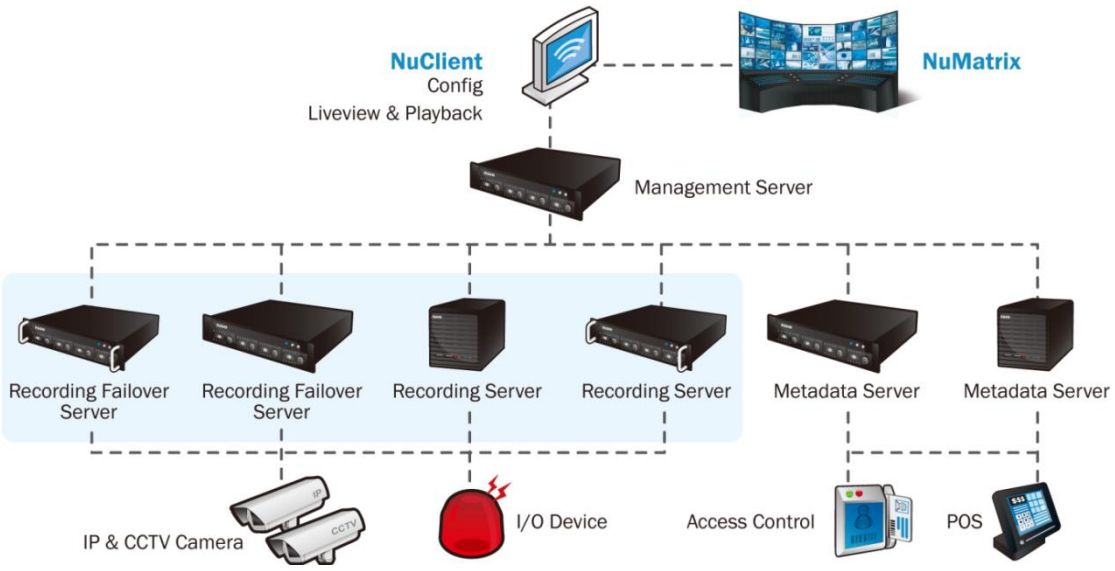
1. Introduction

NUUO Crystal™ is a Linux-based enterprise solution. It is designed for the management of large projects with multiple servers, or single server with high throughput megapixel recording.

NUUO Crystal™ provides centralized management for unlimited devices, servers, users, with the unlimited channels of video wall display for centralized viewing(Ultimate level only), to help users manage a big system efficiently.

There are two levels of the camera channel license—Ultimate and Enterprise. Ultimate level support full function of Crystal, and Enterprise level support full functions except for the NuMatrix video wall application and Recording Failover.

The following is the system structure.



The whole NUUO Crystal™ system contains the following components:

Component	Description
Management Server	The **Management Server** controls and configures the **Recording Server, Recording Failover Server,** and the **Metadata Server**.

Recording Server	One of two type of Recording Service. The **Recording Server** controls the video devices(cameras), and IO devices.
Recording Failover Server (Ultimate Level)	One of two type of Recording Service. The **Recording Failover Server** will fail over Recording Server when Recording Server is disconnected with Management Server.
Metadata Server	The **Metadata Server** controls third-party device such as a POS server, Access Control server, and so on.
NuClient	The software that login **Management Server** for **Live View** (instant video playback), **Playback** (recorded video playback) and **Config** (system configuration).
NuMatrix (Ultimate Level)	The software that control by **NuClient** and display unlimited number of live viewing videos.

2. Installation

2.1 Installation Process

Step 1: Unpack the Unit

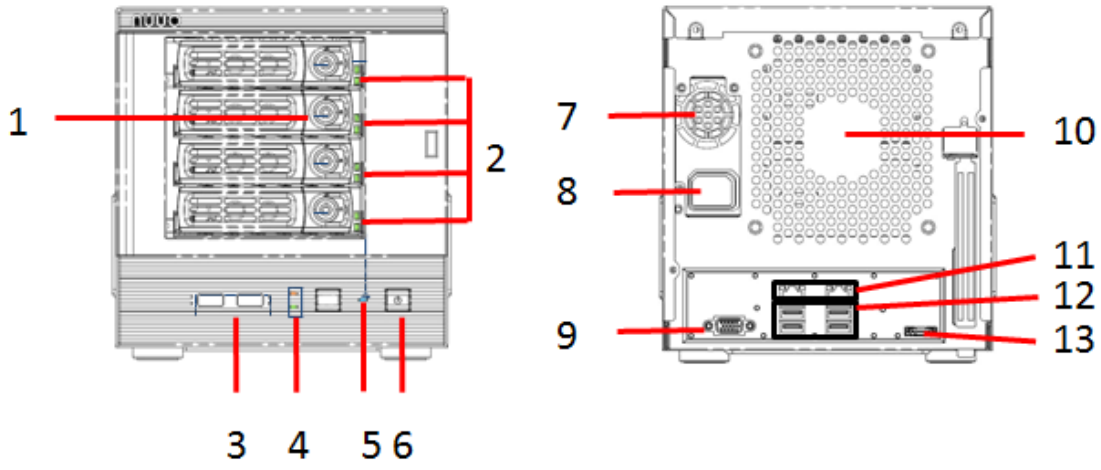
This package contains the following items:

- The unit
- Quick Start Guide
- Screws for disk drives
- Key
- Power cord
- Warranty card
- CD with Installation Wizard, NuClient, NuMatrix, Backup Player, Verification Tool, and Offline License Tool application, user manual, and quick start guide

	The electronic components within the unit can be damaged by Electrostatic Discharge (ESD). Please take precautions at all times when handling the unit or its sub-assemblies.

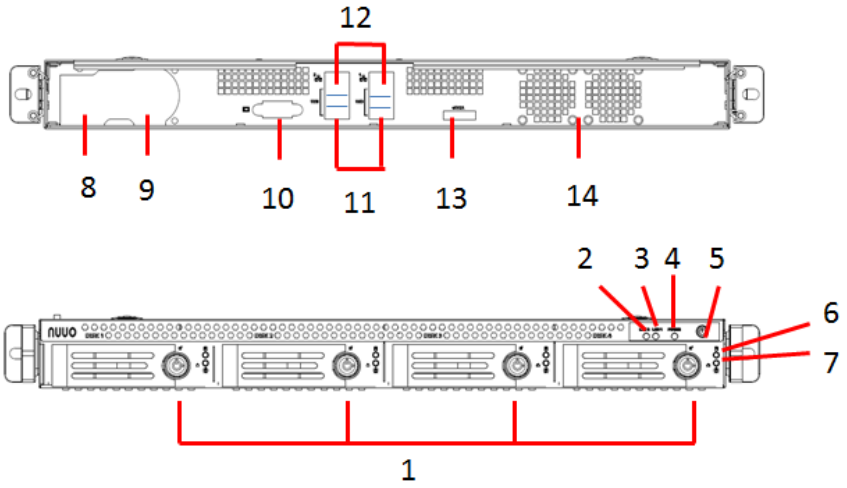
Unit front/rear view

CT-4000: Tower



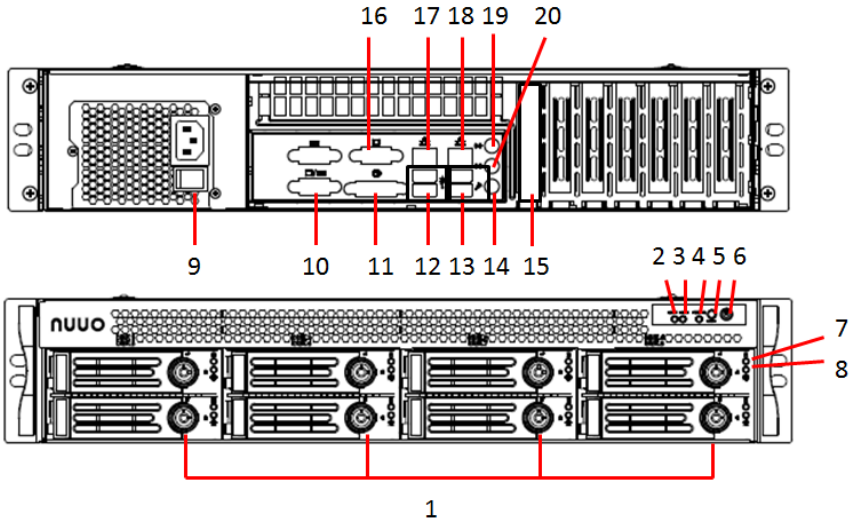
Number	Description
1	Key Lock
2	LED Indicators: HDD1-4
3	USB x2
4	LED Indicators: LAN1-2
5	LED Indicators: Power
6	Power Button
7	PSU Cooling Fan
8	Power Connector
9	VGA
10	System Cooling Fan
11	Gigabit LAN x 2
12	USB x 4
13	eSATA Connector

CT-4000R: 4 bay rackmount



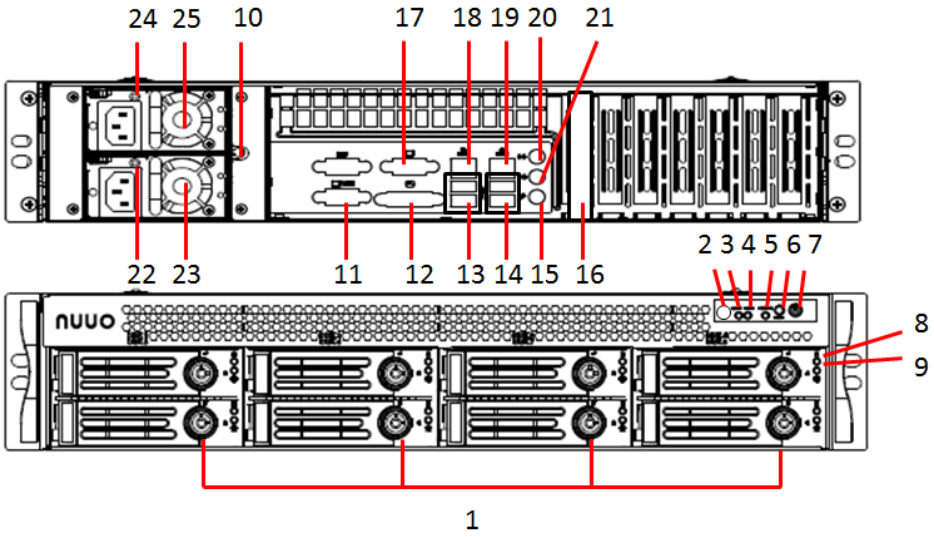
Number	Description
1	Key Lock
2	LED Indicators: LAN2
3	LED Indicators: LAN1
4	Power LED
5	Power Button
6	HDD Power LED
7	HDD Access LED
8	Power Connector
9	PSU Cooling Fan
10	VGA
11	USB x 4
12	Gigabit LAN x 2 (LAN2 / LAN1)
13	eSATA Connector
14	System Cooling Fan

CT-8000R:8 bay rackmount



Number	Description
1	Key Lock
2	LED Indicators: LAN2
3	LED Indicators: LAN1
4	Power LED
5	Reset Button
6	Power Button
7	HDD Power LED
8	HDD Access LED
9	Power Supply Switch
10	COM port
11	DVI
12	USB 2.0 x 2
13	USE 3.0 x 2
14	Microphone in
15	eSATA Connector
16	VGA
17	LAN 2
18	LAN 1
19	Line-in
20	Line-out

CT-8000RP: 8 bay rackmount with redundant power



Setting	Description
1	Key Lock
2	Power Fail LED
3	LED Indicators: LAN2
4	LED Indicators: LAN1
5	Power LED
6	Reset Button
7	Power Button
8	HDD Power LED
9	HDD Access LED
10	Power Supply Mute Button
11	COM port
12	DVI
13	USB 2.0 x 2
14	USE 3.0 x 2
15	Microphone in
16	eSATA Connector
17	VGA
18	LAN 2
19	LAN 1
20	Line-in
21	Line-out
22	LED Indicators: PSU1
23	PSU 2
24	LED Indicators: PSU2
25	PSU1

Step 2: Install Hard Drives

Refer to compatibility list and install HDDs. For optimal performance consideration, install disks with the same model and storage capacity. The available RAID level depends on the amount of disks installed.

1. Open the lid on the front of the unit enclosure.
2. Pull a HDD tray from the enclosure. See the front view figure.
3. Carefully lock the disks into the HDD tray with screws and 3 screws for each disk. We recommend locking the screws on the bottom of the disk, instead of the side of tray. Put the HDD tray back once you finished.

Step 3: Connect to the Network

1. Attach one end of the network cable to the RJ45 network connection. See the rear view figure.
2. Attach the other end of the network cable to your Ethernet hub or switch.

	If there are multiple networks at your facility, note the network to which you connect the unit. You will need this information during the setup process. Please also enable the DHCP function within the network, as the unit will retrieve an IP address through DHCP by default.

Step 4: Connect the Power

1. Attach the power cord to the power source.
2. Connect the power cord to the back of the unit enclosure. See the rear view figure.
3. On the front of the unit, press the power button. See the front view figure.

It takes about a minute for the unit to fully power up. Once it is powered up, the Power Status LED turns blue. See the front view figure.

Step 5: Install the Software

1. Insert the CD into your CDROM.
2. Double-click **Setup.exe** to begin installation.
3. Follow the instruction of **Setup.exe**, and click the **Finish** button to close the installer.

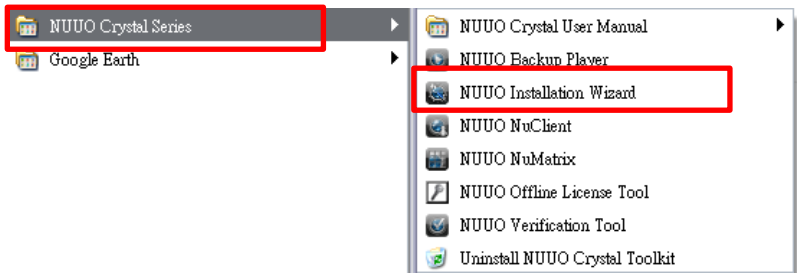
Step 6: Set up the Unit

The software **Installation Wizard** performs the setup procedures on the unit.

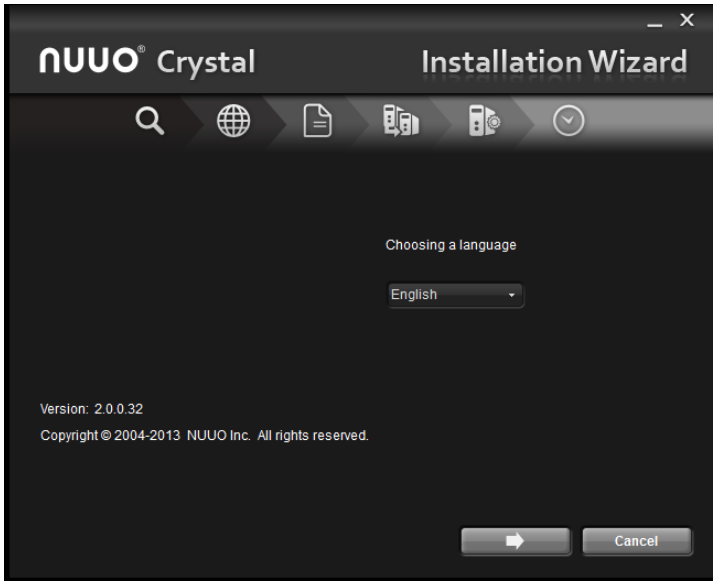
Once a hardware for the **Management Server** is set up and connects to the network, proceed to set up the management service. Launch the **Installation Wizard** to set up the management service for your surveillance network.

To set up the management service:

1. Go to Start and select NUUO Crystal Series
2. Run the executable file **Installation Wizard**.

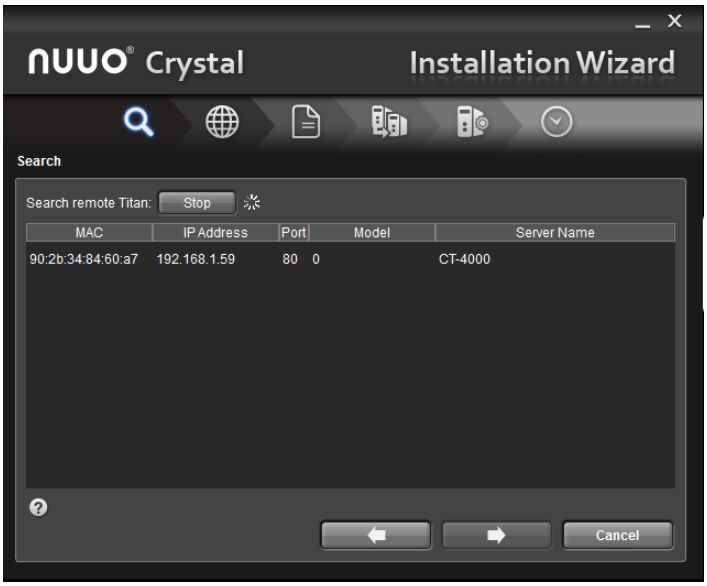


The **NUUO Crystal™ Installation Wizard** opens.



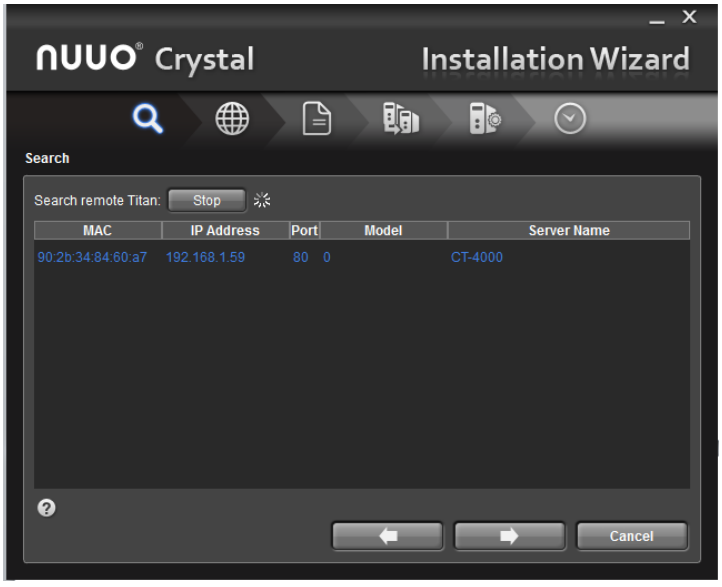
3. Select a language and click the ➡ button to proceed.

A **Search** page opens.



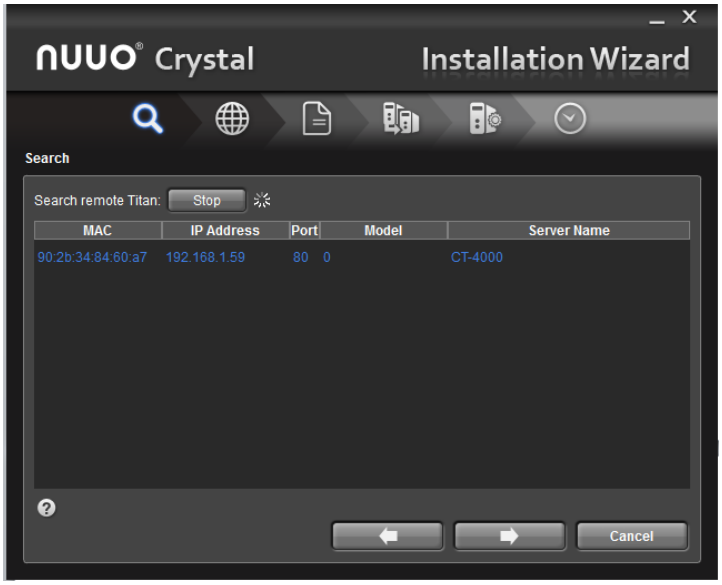
(Click the bottom-left question mark icon ❓ to see the tips.)

4. On the **Search** page, click the **Search** button to search for any **Crystal** within the network.



(Click the bottom-left question mark icon ❓ to see the tips.)

Any **Crystal** discovered within the network will be displayed on the **Search** page, with the information about the MAC address, IP address, port, model and the **Crystal**'s server name.



(Click the bottom-left question mark icon ❓ to see the tips.)

5. Double click the discovered **Crystal.**
   A **Login** dialog opens.

(Click the bottom-left question mark icon ❓ to see the tips.)

6. Enter the username and the password. Click the **OK** button to submit. Then click the ➡ button to proceed.

The **Network** page opens.

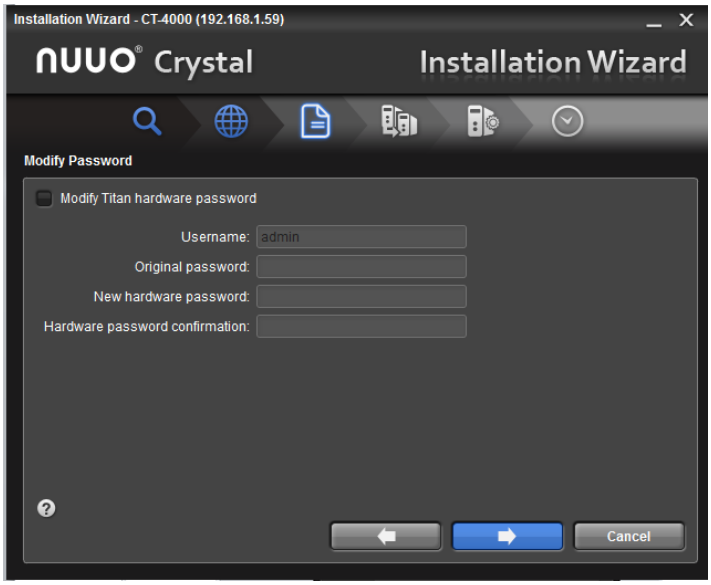
(Click the bottom-left question mark icon ❷ to see the tips.)

7. Make your network settings. Then click the ➡ button to proceed.

(Click the bottom-left question mark icon ❷ to see the tips.)

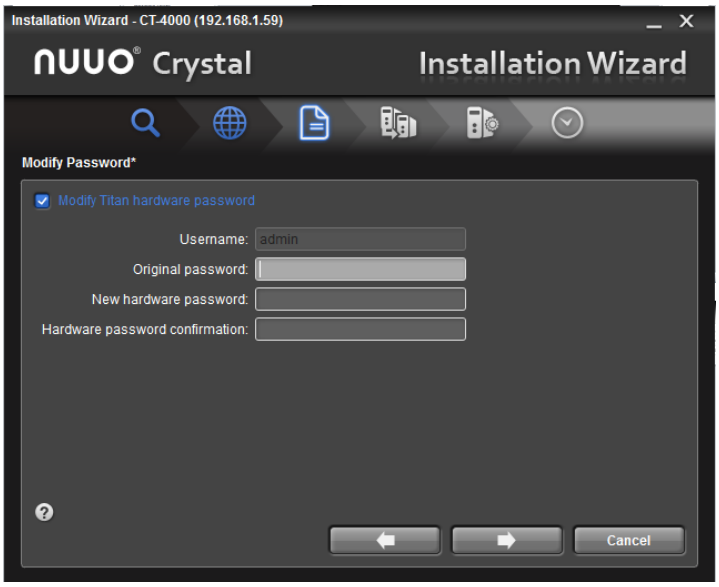
	For web default Port is 80(TCP).

A **Modify Password*** page then opens.



(Click the bottom-left question mark icon ❓ to see the tips.)

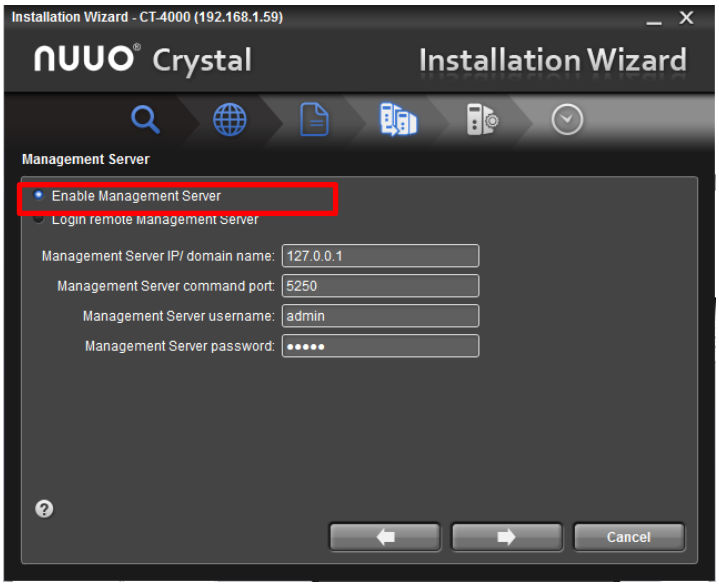
8. Modify the password to access the **Crystal** hardware. Then click the ➡ button to proceed.



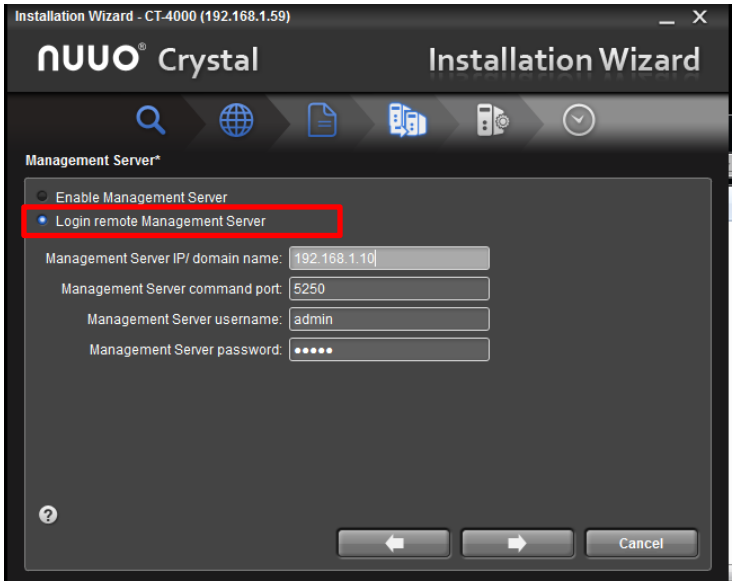
	Crystal hardware password is for Crystal hardware only.

A **Management Server** page opens.

9. On the **Management Server** page, enable the management service on the previously discovered **Crystal** or login to another Management Server. Then click the ➡ button to proceed.



	For **Management Server** default Port is 5250(TCP) and the server port should be larger than 1000. Also the command port cannot be the same.



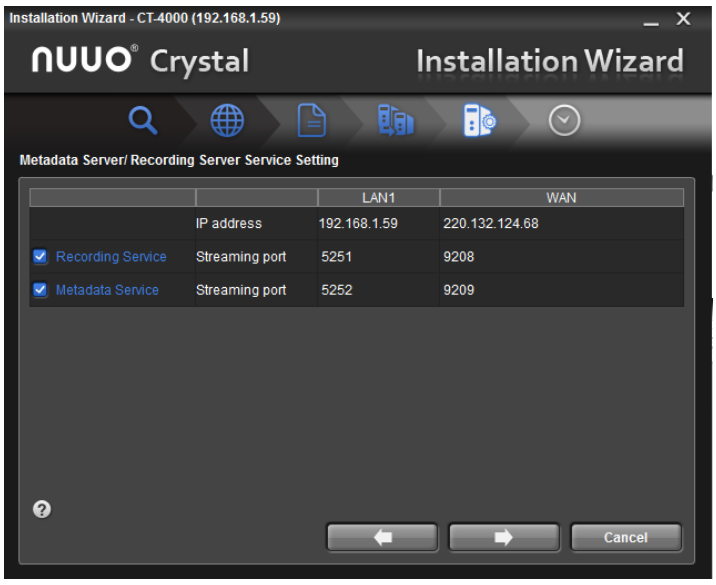
(Click the bottom-left question mark icon ❷ to see the tips.)

	If you choose “enable Management Server” on the previously discovered **Crystal**, the **Crystal** will assign as Management Server. If you choose “login remote Management Server”, please enter the Management Server IP, port, username and password to assign the previously discovered **Crystal** as Recording Server or Metadata Server to the Management Server.

The **Metadata Server/Recording Server Service Setting** page opens.

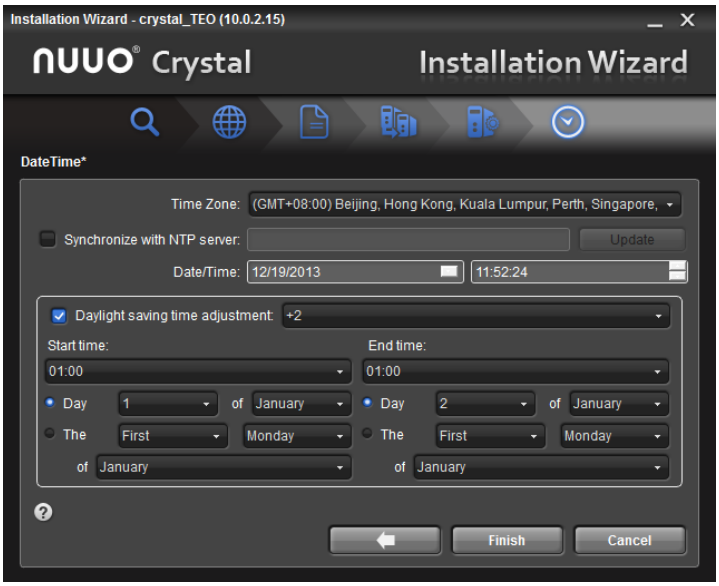
10. Enable/disable the recording service or metadata service on the **Crystal** and fill in the port information for LAN or WAN IP and port if the Recording Server/Metadata Server are under WAN environment.

Then click the ➡ button to proceed.



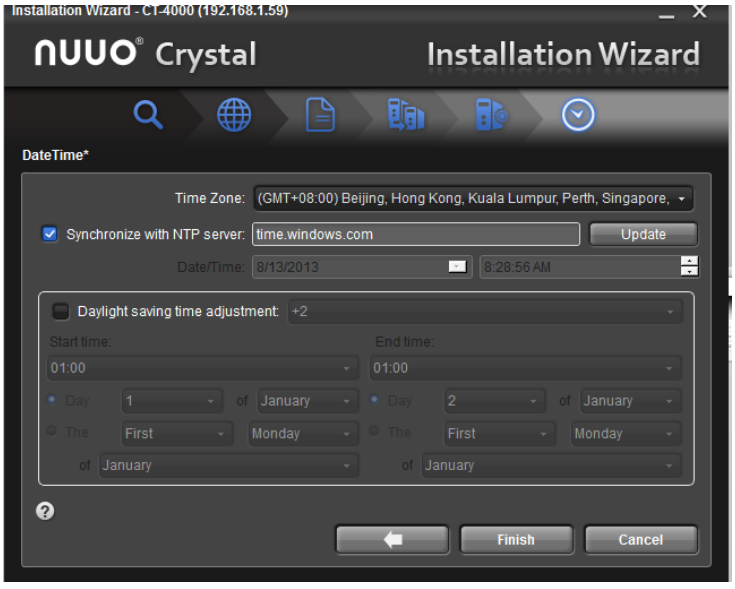
	For **Recording Server** default Port is 5251(TCP) and **Metadata Server** default Port is 5252(TCP). The server port should be larger than 1000.

A **Date Time** page opens.



(Click the bottom-left question mark icon ❓ to see the tips.)

11. Select **Synchronize with NTP server** to synchronize date/time with the Internet time server, or deselect **Synchronize with NTP server** to enables manual date/time settings.



(Click the bottom-left question mark icon ❓ to see the tips.)

	To connect to the NTP server, access the Internet by LAN1.

	For NTP Server default Port is 123(UDP).

Select **Daylight saving time adjustment** to set daylight saving time zone, start time and end time.

12. Click the **Finish** button to finish the setup of management service.

2.2 LED Status Definitions

CT-4000

Function	LED Status
Power Status	▸ Power-on: blue ▸ Power-off: dark
HDD Power Status (top)	▸ Power-on: blue ▸ Power-off: dark
HDD Activity Status (bottom)	▸ Accessing(Read/Write files): blue with blinking ▸ Not accessing: dark
Ethernet Status	▸ Linking: blue ▸ Accessing: blue with blinking ▸ No linking: dark

CT-4000R

Function	LED Status
Power Status	▸ Power-on: blue ▸ Power-off: dark
HDD Status (top)	▸ Power-on: green ▸ Power-off: dark
HDD Activity Status (bottom)	▸ Accessing(Read/Write files): blue with blinking ▸ Not accessing: dark
Ethernet Status	▸ Linking: blue ▸ Accessing: blue with blinking ▸ No linking: dark

CT-8000R

<table>
<tr><th>Function</th><th>LED Status</th><th>Remark</th></tr>
<tr><td>Power Status
(front)</td><td>▸ Power-on: blue
▸ Power-off: dark</td><td></td></tr>
<tr><td>HDD Status (Front, HDD
tray, top)</td><td>▸ Power-on: green
▸ Power-off: dark</td><td></td></tr>
<tr><td>HDD Activity Status (Front,
HDD tray, bottom)</td><td>▸ Accessing(Read/Write files): blue with blinking
▸ Not accessing: dark</td><td></td></tr>
<tr><td>Ethernet Status x2
(front)</td><td>▸ Connected: blue
▸ Accessing: blue with blinking</td><td>Two LED, one for LAN1 status and the other one for LAN2 status</td></tr>
<tr><td>Ethernet Activity x2
(rear)</td><td>▸ Link Rate indicator (Left side)
<table><tr><th>Setting</th><th>Description</th></tr><tr><td>Green</td><td>=1000Mbps</td></tr><tr><td>Orange</td><td>=100Mbps</td></tr><tr><td>Dark</td><td>=10Mbps or no link</td></tr></table>▸ Link status indicator(Right side)
1) Accessing: Green with blinking</td><td>Two LEDs for each Ethernet port</td></tr>
</table>

CT-8000RP

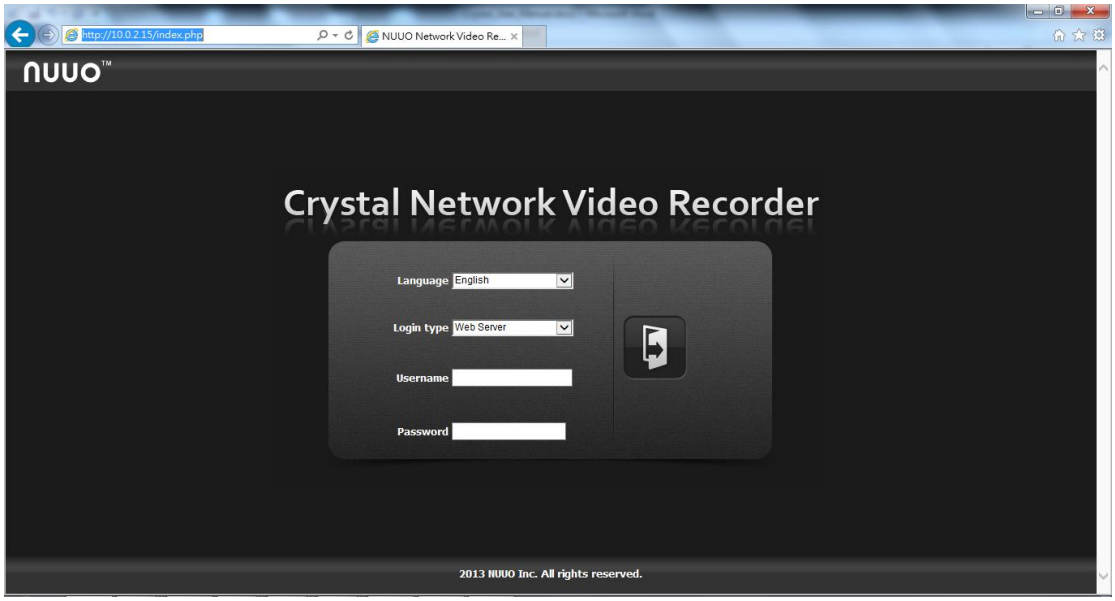
<table>
<tr><th>Function</th><th>LED Status</th><th>Remark</th></tr>
<tr><td>Power Status
(front)</td><td>▸ Power-on: blue
▸ Power-off: dark</td><td></td></tr>
<tr><td>Power Fail</td><td>▸ Power-fail: red
▸ Normal: dark</td><td></td></tr>
<tr><td>HDD Status (Front, HDD tray, top)</td><td>▸ Power-on: green
▸ Power-off: dark</td><td></td></tr>
<tr><td>HDD Activity Status (Front, HDD tray, bottom)</td><td>▸ Accessing(Read/Write files): blue with blinking
▸ Not accessing: dark</td><td></td></tr>
<tr><td>Ethernet Status x2
(front)</td><td>▸ Connected: blue
▸ Accessing: blue with blinking</td><td>Two LED, one for LAN1 status and the other one for LAN2 status</td></tr>
<tr><td>Ethernet Activity x2
(rear)</td><td>▸ Link Rate indicator (Left side)
<table><tr><th>Setting</th><th>Description</th></tr><tr><td>Green</td><td>=1000Mbps</td></tr><tr><td>Orange</td><td>=100Mbps</td></tr><tr><td>Dark</td><td>=10Mbps or no link</td></tr></table>▸ Link status indicator(Right side)
2) Accessing: Green with blinking</td><td>Two LEDs for each Ethernet port</td></tr>
</table>

3. Web Client

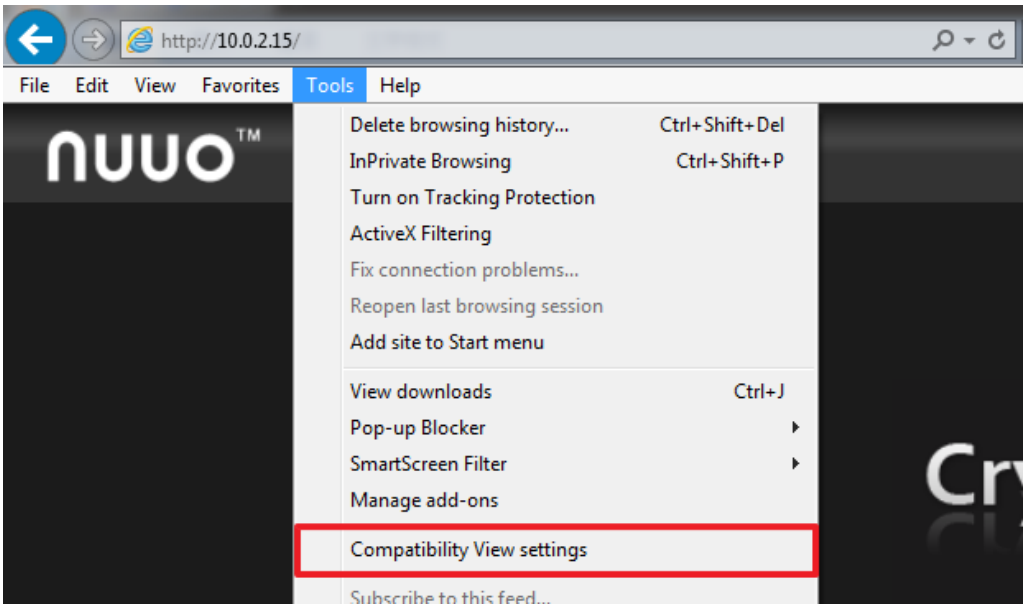
Through Web Client, logging **Web Server** for **hardware** settings, or logging **Management Server** for live viewing, playback, or system configuration.

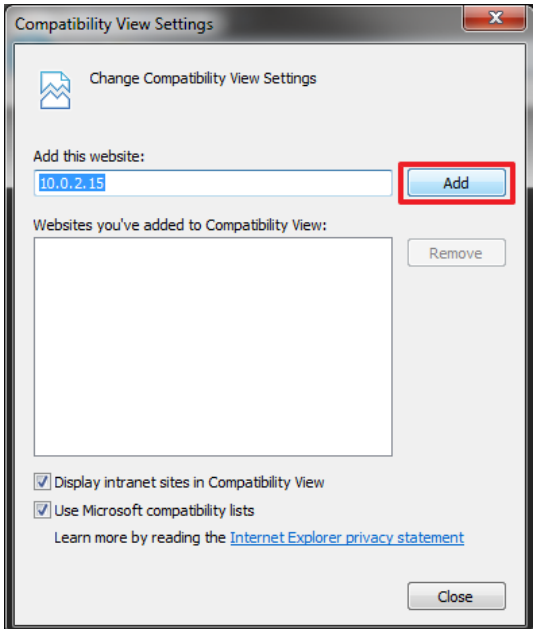
3.1 Login

1. Open the **NUUO Crystal™ Network Video Recorder Login** page by entering the IP address on the browser.

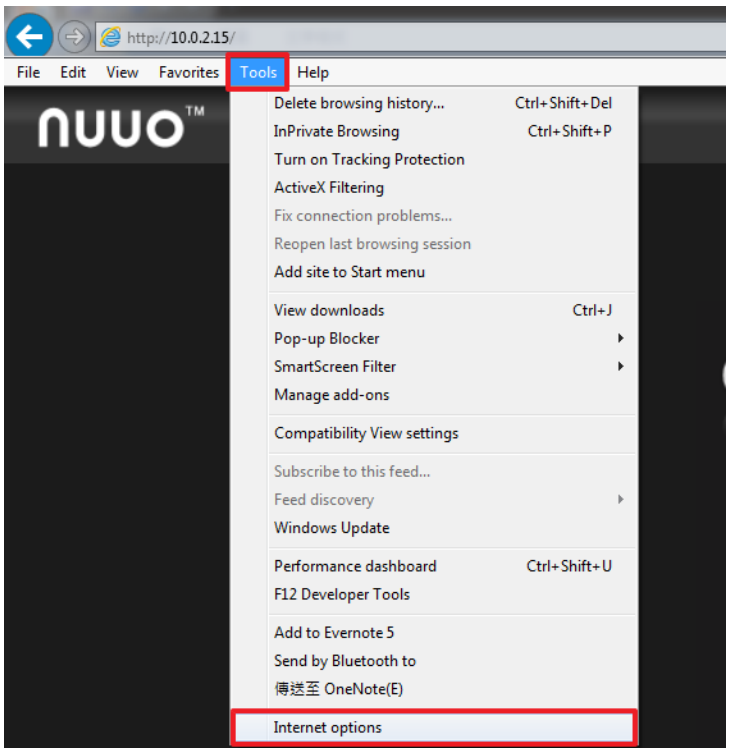


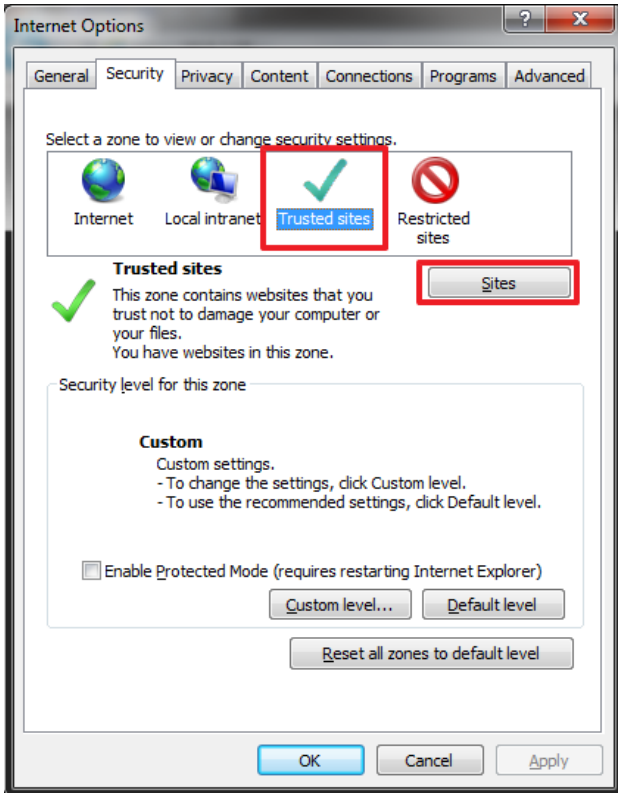
2. If the browser is IE 10, or IE 11, it is must to enable the compatibility mode.
   Go to tool bar on the browser, choosing Tools| Compatibility View settings, and then add the server IP to compatibility mode.

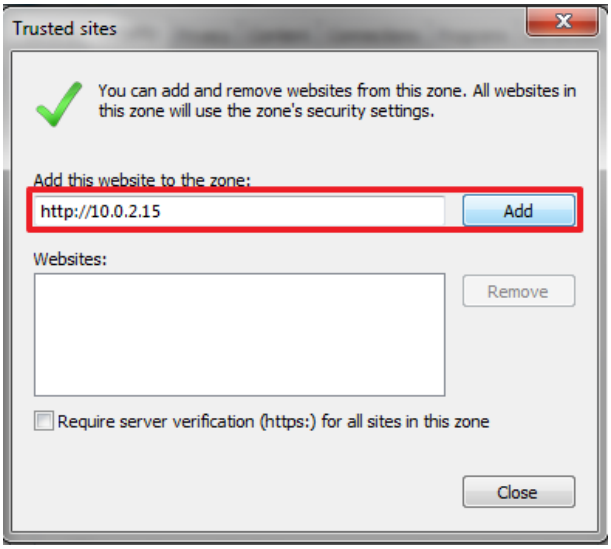




3. It is suggested to add the server to trusted site.
   Go to tool bar on the browser, choosing Tools| Internet Options| Trusted sites| Sites, and then add the server IP to trusted site.


http://10.0.2.15/
File Edit View Favorites Tools Help
nuuo™
Delete browsing history... Ctrl+Shift+Del
InPrivate Browsing Ctrl+Shift+P
Turn on Tracking Protection
ActiveX Filtering
Fix connection problems...
Reopen last browsing session
Add site to Start menu
View downloads Ctrl+J
Pop-up Blocker
SmartScreen Filter
Manage add-ons
Compatibility View settings
Subscribe to this feed...
Feed discovery
Windows Update
Performance dashboard Ctrl+Shift+U
F12 Developer Tools
Add to Evernote 5
Send by Bluetooth to
傳送至 OneNote(E)
Internet options


Internet Options
General Security Privacy Content Connections Programs Advanced
Select a zone to view or change security settings.
Internet
Local intranet
Trusted sites
Restricted sites
Trusted sites
This zone contains websites that you trust not to damage your computer or your files.
You have websites in this zone.
Sites
Security level for this zone
Custom
Custom settings.
- To change the settings, click Custom level.
- To use the recommended settings, click Default level.
Enable Protected Mode (requires restarting Internet Explorer)
Custom level...
Default level
Reset all zones to default level
OK
Cancel
Apply


Trusted sites
You can add and remove websites from this zone. All websites in this zone will use the zone's security settings.
Add this website to the zone:
http://10.0.2.15
Add
Websites:
Remove
Require server verification (https:) for all sites in this zone
Close

4. Select a language and select the login type.
   Web server will lead to Crystal hardware settings page and Management Server will lead to login **Management Server** to **Live View**, **Playback**, and system **Config**.

5. Enter the username and password.

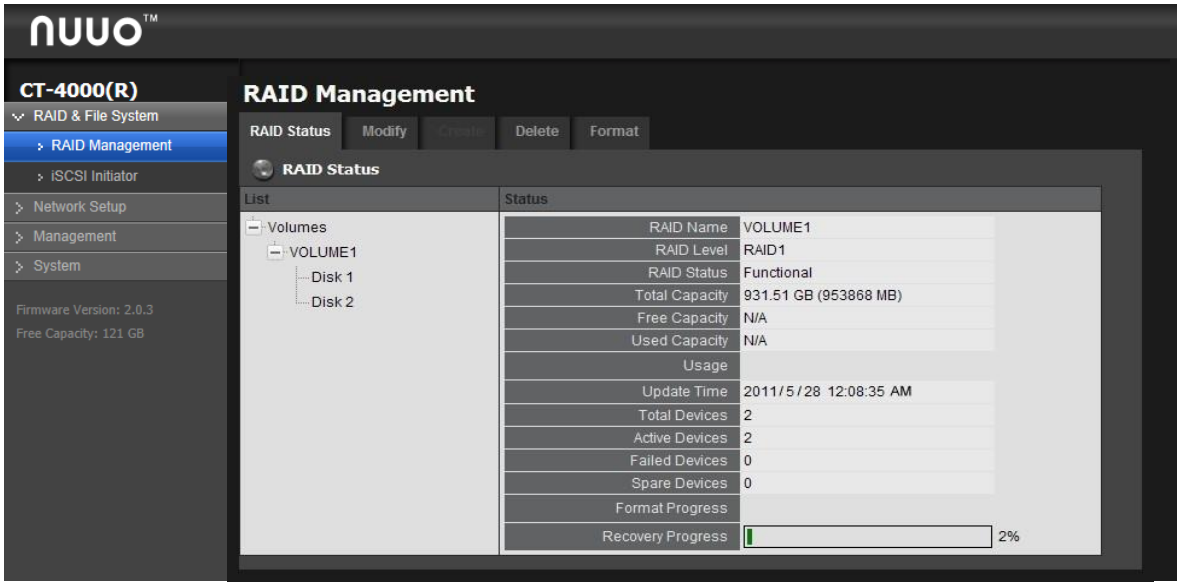
6. Click the button to log in.

7. The web settings page open.

3.2 Web Server (Hardware Settings Page)

The **web server** page enables users to set up **hardware** or enable **services** through the web-based interface.

It includes RAID, iSCSI and File System settings, Network settings, changing hardware password, loading Crystal to factory default value, date/ time settings, firmware upgrading, and reboot/shut down Crystal.



The features settings are: RAID & File System, Network Setup, Management and System, which will be explicated in the following sections.

	The log in username and password is Crystal hardware's username and password.

3.2.1 RAID & File System

Use the **RAID & File System** menu to configure the system's RAID features and file settings.

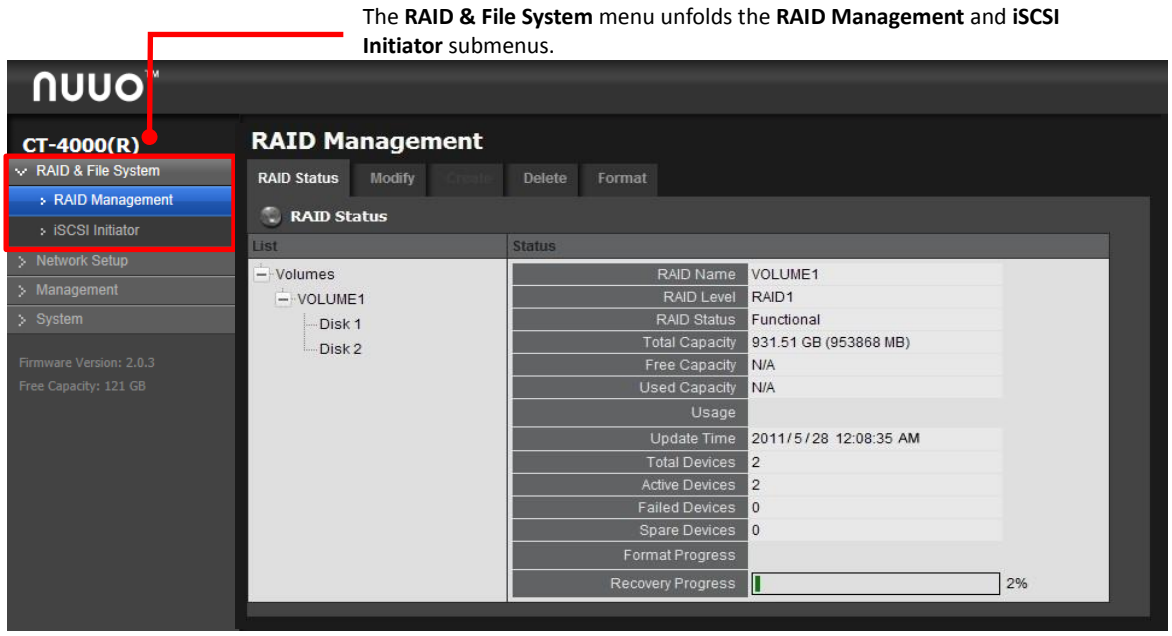
To access the **RAID & File System** menu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Config Catalog, click the **RAID & File System**.

   The **RAID & File System** menu unfolds the **RAID Management** and **iSCSI Initiator** submenus.



   The features submenus are: RAID Management and iSCSI Initiator, which will be explicated in the following sections.

3.2.1.1 RAID Management

As the name suggest, the **RAID Management** tabbed page manages the system's RAID (Redundant Array of Independent Disks), a storage that combines multiple disk drives into a logical unit.

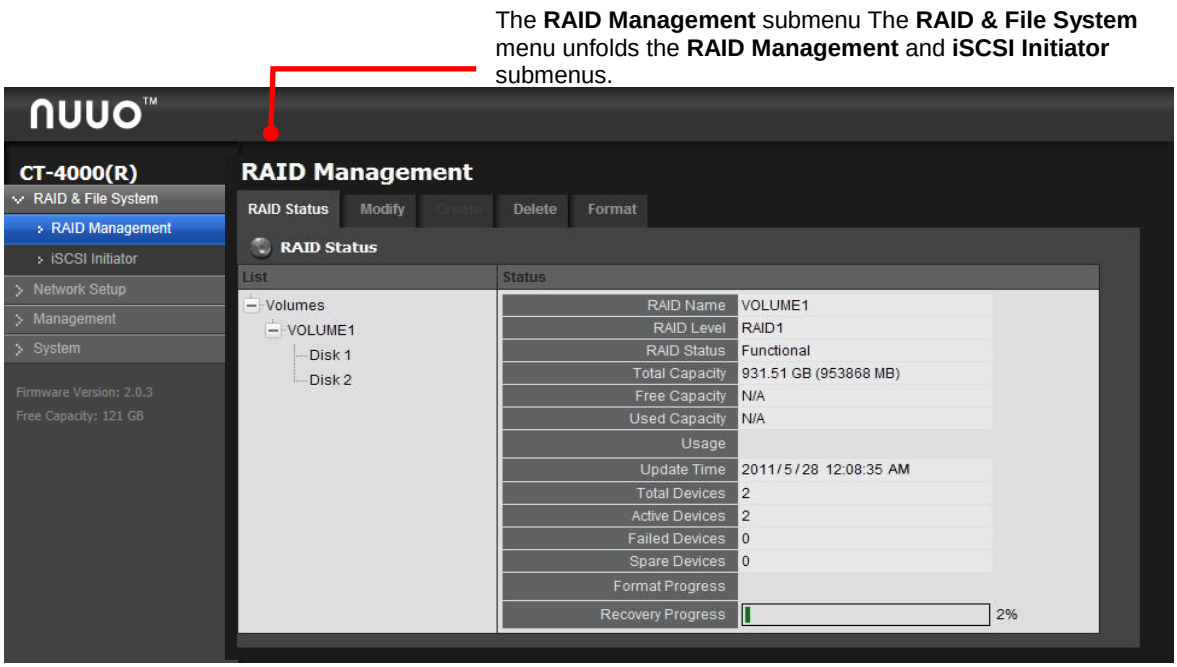
To access the **RAID Management** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

2. The web settings open.

3. From the Config Catalog, click the **RAID & File System** | **RAID Management**.

   The **RAID Management** submenu displays in the Configuration Pane.



   The **RAID Management** menu features five tabbed pages, RAID Status, Modify, Create, Delete and Format, which will be explicated in the following sections.

3.2.1.1.1RAID Status

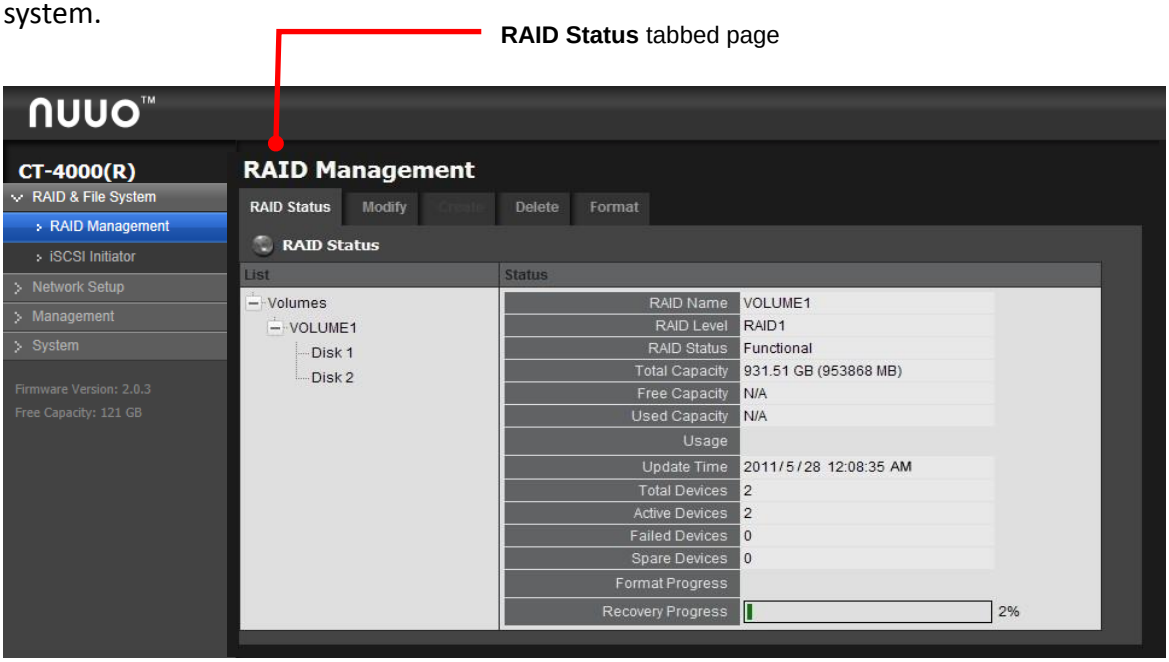
The **Status** tabbed page delivers the status of RAID “volume”, which means one or more disk drives working together as a logical drive. Video recording requires a volume to be created first.

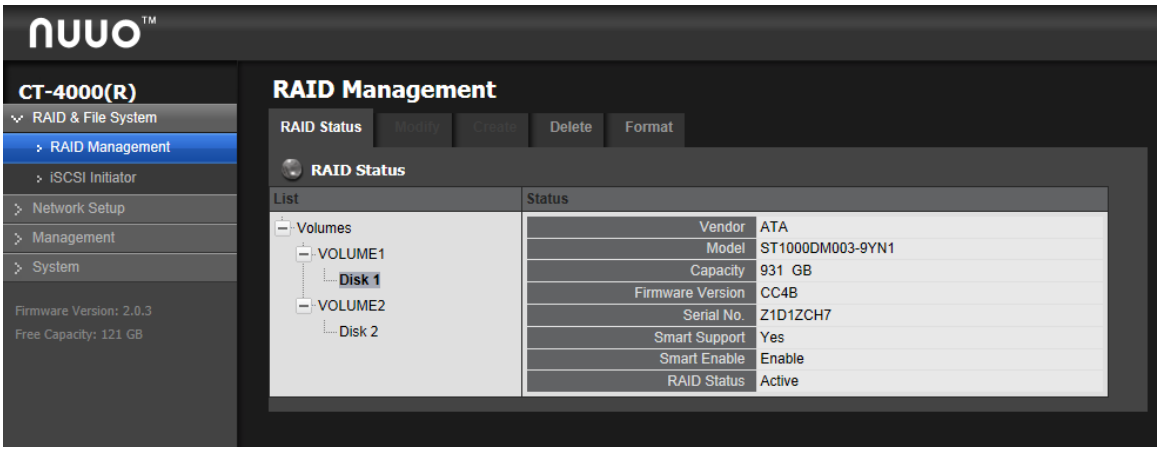
To access the **Status** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.
   The web settings open.

2. From the Config Catalog, click the **RAID & File System** | **RAID Management** | **RAID Status** tab.

   The **RAID Status** tabbed page opens and shows the created volume(s) in the system.





The RAID status info delivered is:

<table>
<tr><th>Group</th><th>Description</th></tr>
<tr><td>Disk</td><td>Delivers the present volume(s) in the system.
▸ Click Volume # or Disk# to switches the status info between the present volume(s) and disk(s).
▸ If there hasn't been any volume created yet, "No Volume" is displayed here. The status info delivered for a present disk is:
<table>
<tr><th>Info</th><th>Description</th></tr>
<tr><td>Vendor</td><td>Delivers the manufacturer of the disk.</td></tr>
<tr><td>Model</td><td>Delivers the model number of the disk.</td></tr>
<tr><td>Capacity</td><td>Delivers the total capacity of the disk.</td></tr>
<tr><td>Firmware</td><td>Delivers the firmware version of the disk.</td></tr>
<tr><td>Serial No.</td><td>Delivers the serial number of the disk.</td></tr>
<tr><td>Smart Support</td><td>Delivers the smart support of the disk.</td></tr>
<tr><td>Smart Enabled</td><td>Delivers the disk's support of S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology), which enables a hard disk drive to detect and report on various indicators of reliability, in order to anticipate failures.</td></tr>
<tr><td>RAID Status</td><td>Delivers the status of the RAID that the disk belongs to.</td></tr>
</table></td></tr>
<tr><td>Volume</td><td>Shows the status of the selected volume:
<table>
<tr><th>Info</th><th>Description</th></tr>
<tr><td>RAID Name</td><td>Delivers the name of the volume, which is auto-assigned when the volume is created.</td></tr>
<tr><td>RAID Level</td><td>Delivers the RAID level, which is defined when the volume is created.
▸ The selectable levels depend on the number of drives present in the system.
▸ See Create to know how to define the RAID level.</td></tr>
<tr><td>RAID Status</td><td>Delivers the following statuses of the volume:</td></tr>
</table></td></tr>
</table>

	<table><tr><th>Message</th><th>Description</th></tr><tr><td>Functional</td><td>The volume is normally operating.</td></tr><tr><td>Critical</td><td>There are some problems with the volume, but video recording is normal.</td></tr><tr><td>Offline</td><td>The volume cannot be found. Hence video recording is stopped and the storage cannot be accessed.</td></tr><tr><td>File system error</td><td>Volume is found but isn't mounted so video recording is stopped and storage cannot be accessed.</td></tr></table>
Free Capacity	Delivers the free space on the volume.
Used Capacity	Delivers the used space on the volume.
Usage	Delivers the percentage of the volume's usage.
Update Time	Delivers the time when the volume is created /updated.
Total Devices	Delivers the total number of the disk(s) covered by the volume and also the number of the disk(s) that is active, failed or spare.
Active Devices	Delivers the number of the active disk(s) covered by the volume at the moment.
Failed Devices	Delivers the number of the failed disk(s) covered by the volume at the moment.
Spare Devices	Delivers the number of the spare disk(s) covered by the volume at the moment.
Format Progress	Delivers the formatting progress if the volume is being formatted at the moment.
Recovery Progress	Delivers the recovery progress if the volume is being recovered at the moment.

3.2.1.1.1.1Create

It relies on the **Create** tabbed page to create one or more volumes in the system.

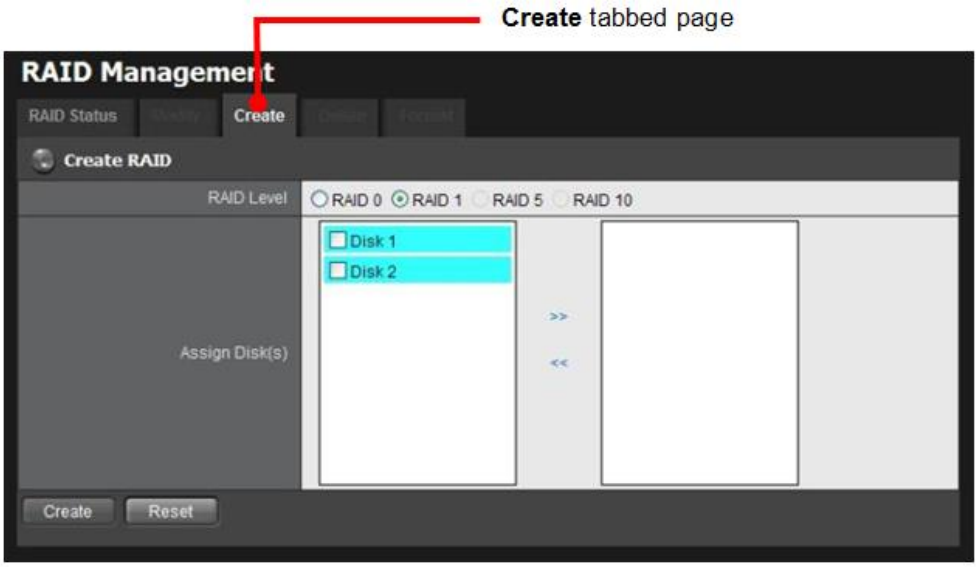
To access the **Create** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Config Catalog, click the **RAID & File System** | **RAID Management** | **Create** tab.

The **Create** tabbed page opens and shows the created volume(s) in the system.



On the **Create** tabbed page, the featured settings are:

Setting		Description	Default
RAID Level		Defines the RAID level.	It depends on the number of drives present in the system
Assigned Disk(s)	**Disk #**	Selects a disk to assign it to the volume to be created.	Deselected
Create button		Creates the configured volume.	--
Reset button		Reset the configured volume.	--

3. Click **Create** button and a confirmation dialog pops up.

4. Check the **Yes, I want to create volume with those disk(s) box**, and click the **Yes, create it** button.

5. Finish the setup of Create.

	The maximum capacity of each volume is 16TB.
	The RAID Volume will be functional on another unit if all disks of this volume are moved to the unit.

	After setting RAID level, you are not allowed to change neither the RAID level nor the number of disks containing in this volume.

3.2.1.1.1.2 Modify

It relies on the **Modify** tabbed page to replace a broken hard drive with a new one, instead of modifying the RAID level.

In the case of “Critical” RAID status, a warning message will notice that one of the volume’s disks may be damaged. Although the video recording won’t be impacted, an immediate replacement is recommended to protect the volume from data loss.

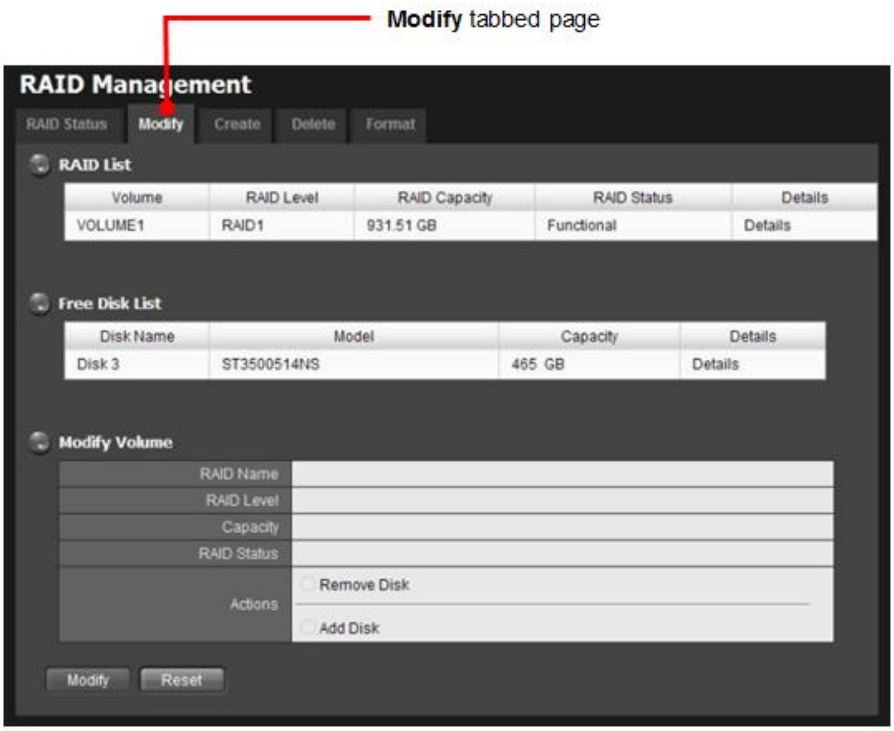
To access the **Modify** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Config Catalog, click the **RAID & File System** | **RAID Management** | **Modify** tab.

   The **Modify** tabbed page opens and shows the created volume(s) in the system.



3. Modify a volume:
   (1) Select the damaged disk to remove.
   (2) Click **Remove** button to remove the selected disk.
   (3) After the system remove the disk successfully, replace it with a new disk, and back to the **Modify** tabbed page to add this new free disk.

	This function isn't applicable to RAID 0, which has no data protection mechanism by nature.
	This function is recommended for any unexpected disk damage. Use this function to safely unplug the running HDD.

3.2.1.1.1.3 Delete

It relies on the **Delete** tabbed page to delete one or more volumes.

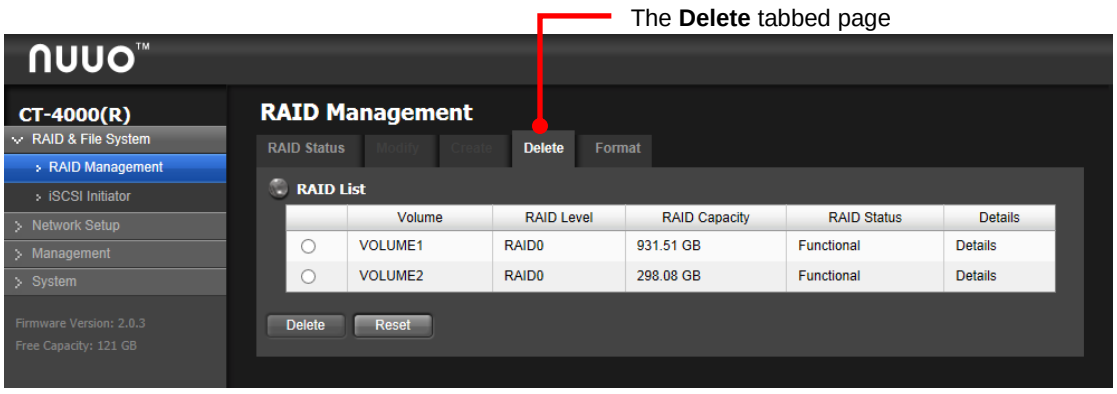
To access the **Delete** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Config Catalog, click the **RAID & File System** | **RAID Management** | **Delete** tab.

   The **Delete** tabbed page opens and shows the created volume(s) in the system.



3. Delete a volume:

   (1) Select a volume.
   (2) Click the **Delete** button to delete the selected volume.
   OR
   Click the **Reset** button to clear the selection.

3.2.1.1.1.4 Format

It relies on the **Format** tabbed page to format the volumes functioning in the system.

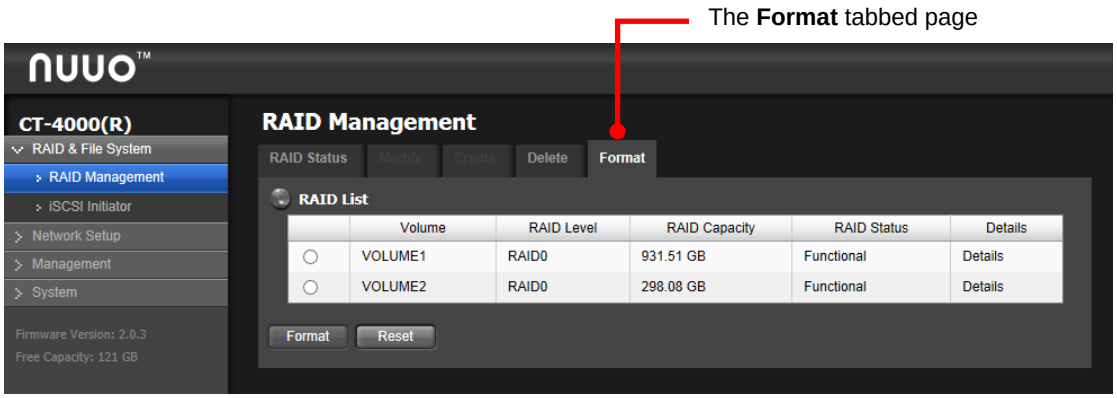
To access the **Format** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Config Catalog, click the **RAID & File System** | **RAID Management** | **Format** tab.

   The **Format** tabbed page opens and shows the created volume(s) in the system.



   (1) Select a volume.
   (2) Click the **Format** button,
   The formatting starts and progresses.

3.2.1.2 iSCSI Initiator

It relies on the **iSCSI Initiator** tabbed page to create an external storage on iSCSI, which means “Internet Small Computer System Interface”, an IP-based protocol for transmitting data and linking data storage facilities.

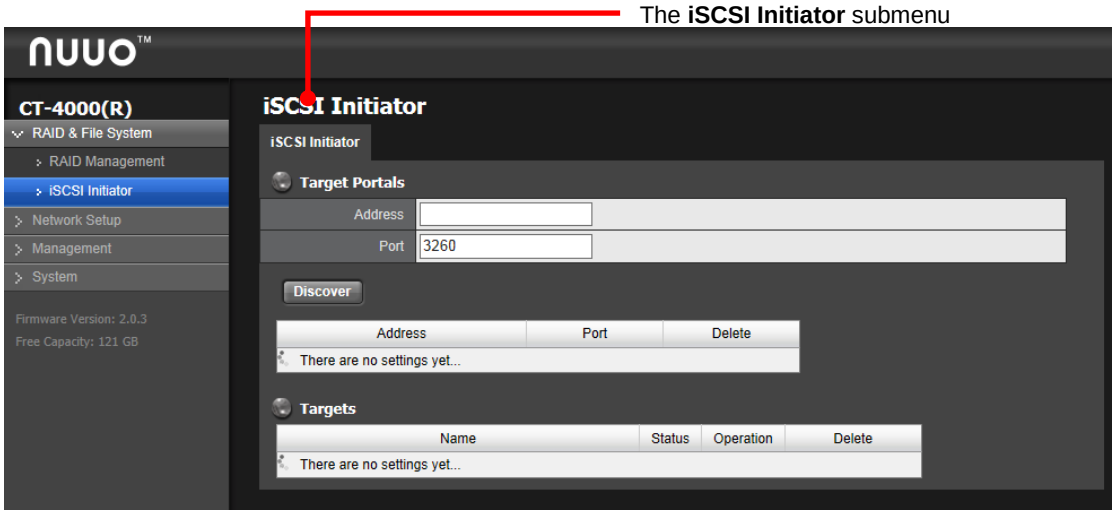
To access the **iSCSI Initiator** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Config Catalog, click the **RAID & File System** | **iSCSI Initiator**.

   The **iSCSI Initiator** submenu displays in the Configuration Pane.

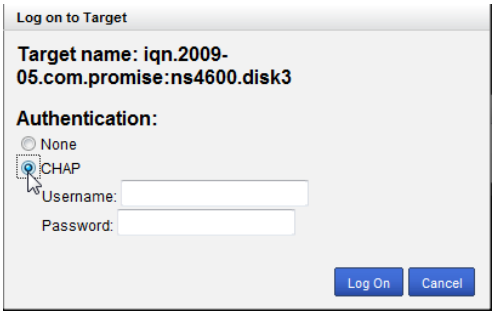


3. Create an external storage on iSCSI.

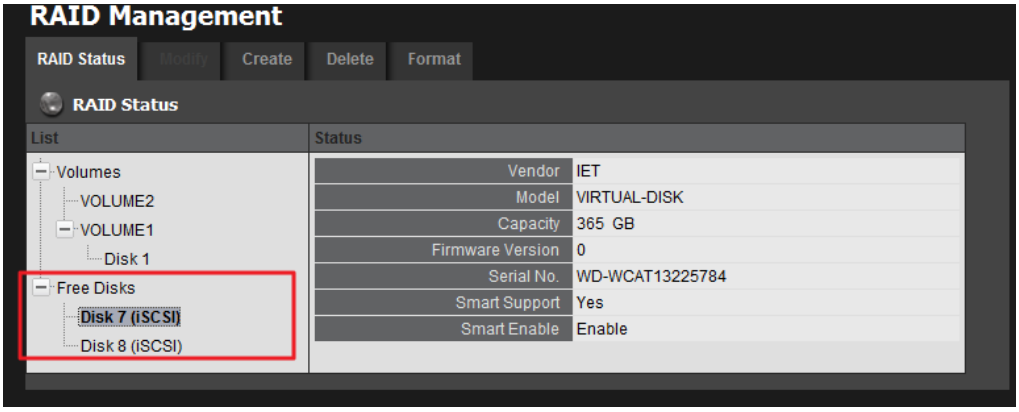
4. Fill in the IP address and the port number (default 3260) for iSCSI

5. Click the **Discover** button.
   The discovered iSCSI will show.

6. Log on each disk on Target. If you have set password on iSCSI, choose CHAP to log on. If not, choose “None”.



7. Open the **RAID Status** tabbed page as described in RAID Status, the iSCSI disk will show under the **Free Disks**.



8. Creates a volume for it as described in Create. You can only create a volume with purely iSCSI disk.

	We suggest that you use more than one HD to create one volume. DO NOT use only one HD to divide to more than 2 volumes.

	If you log off the disk that has been created as a RAID, the current recording file may be destroyed.

3.2.2 Network Setup

It relies on the **Network Setup** menu to configure the systems' networking so the system can connect and communicate with associated devices within the network.

To access the **Network Setup** menu:

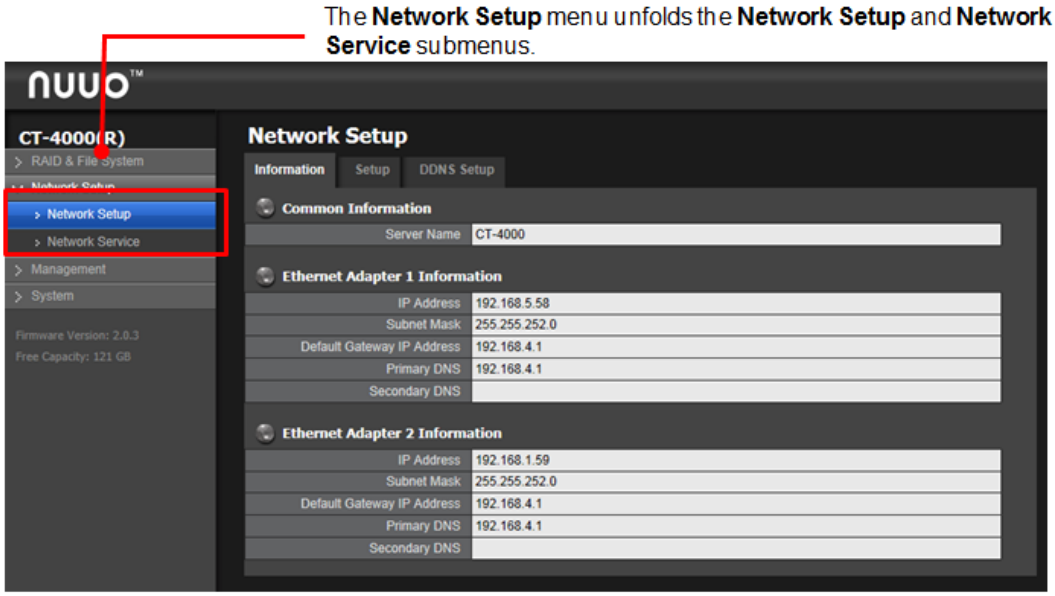
1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in

Login.

The web settings open.

2. From the Config Catalog, click the **Network Setup**.

   The **Network Setup** menu unfolds the **Network Setup** and **Network Service** submenus.



The features submenus are Network Setup and Network Service, which will be explicated in the following sections.

3.2.2.1 Network Setup

The **Network Setup** submenu features the network settings including IP address, subnet mask, default gateway and primary/secondary DNS.

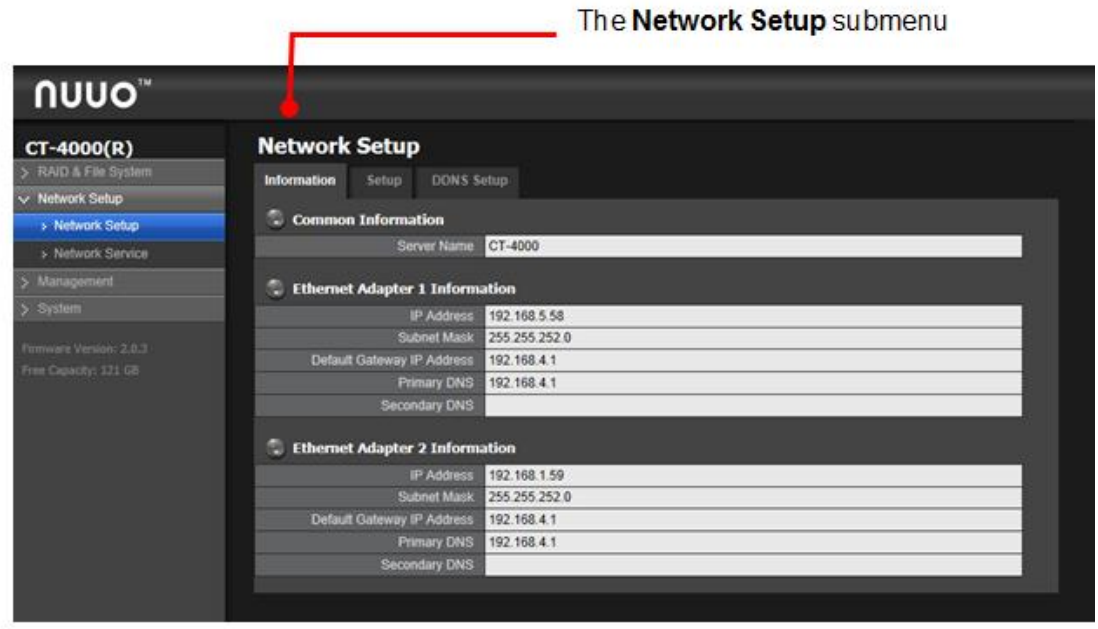
To access the **RAID Management** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

The web settings open.

2. From the Config Catalog, click the **Network Setup** | **Network Setup**.

The **Network Setup** submenu displays in the Configuration Pane.



The **Network Setup** menu features three tabbed pages, Information, Setup and DDNS Setup, which will be explicated in the following sections.

3.2.2.1.1 Information

The **Information** tabbed page allows users to view the system's Ethernet networking settings.

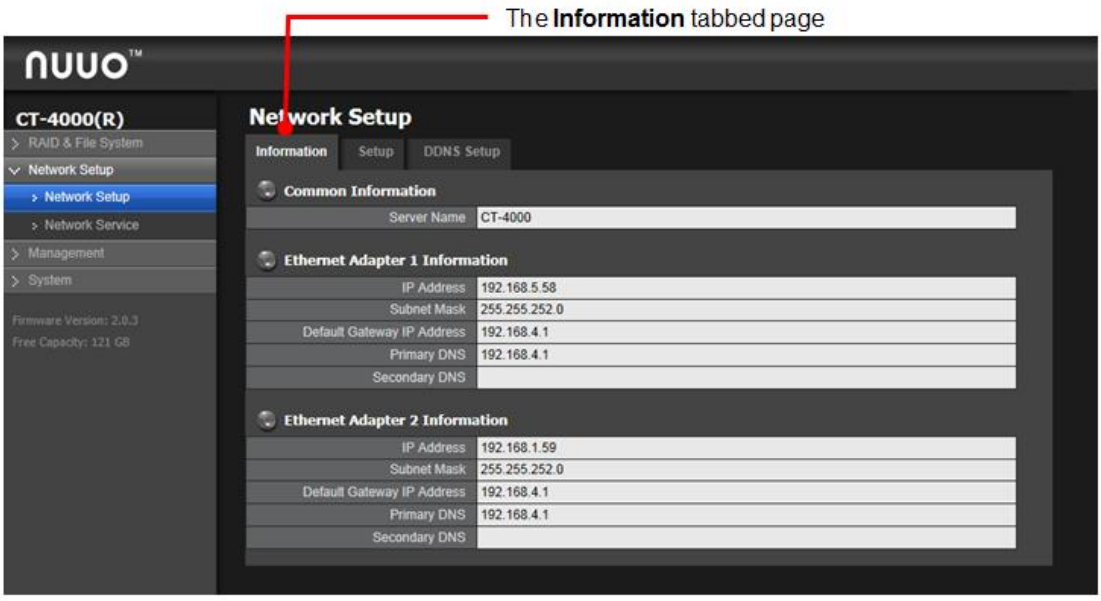
To access the **Information** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

The web settings open.

2. From the Config Catalog, click the **Network Setup** | **Network Setup** | **Information** tab.

   The **Information** tabbed page opens and shows the network configuration of the system's LAN ports.



On the **Information** tabbed page, the info delivered is:

Group	Item	Description
Connection Information	**Server Name**	Delivers the hardware's server name.
Ethernet Adapter 1 / 2 Information	**IP Address**	Delivers the IP address assigned to this adapter.
	Subnet Mask	Delivers the subnet mask assigned to the IP address used on the adapter.
	Default Gateway IP Address	Delivers the IP address assigned to the adapter as gateway.
	Primary DNS	Delivers the IP address assigned to the adapter as the primary DNS (Domain Name System).
	Secondary DNS	Delivers the IP address assigned to the adapter as the secondary DNS (Domain Name System).

	To access the settings, see Setup tabbed page.
	When an adapter isn't in use, the network information isn't available.

	For web default Port is 80(TCP).

3.2.2.1.2 Setup

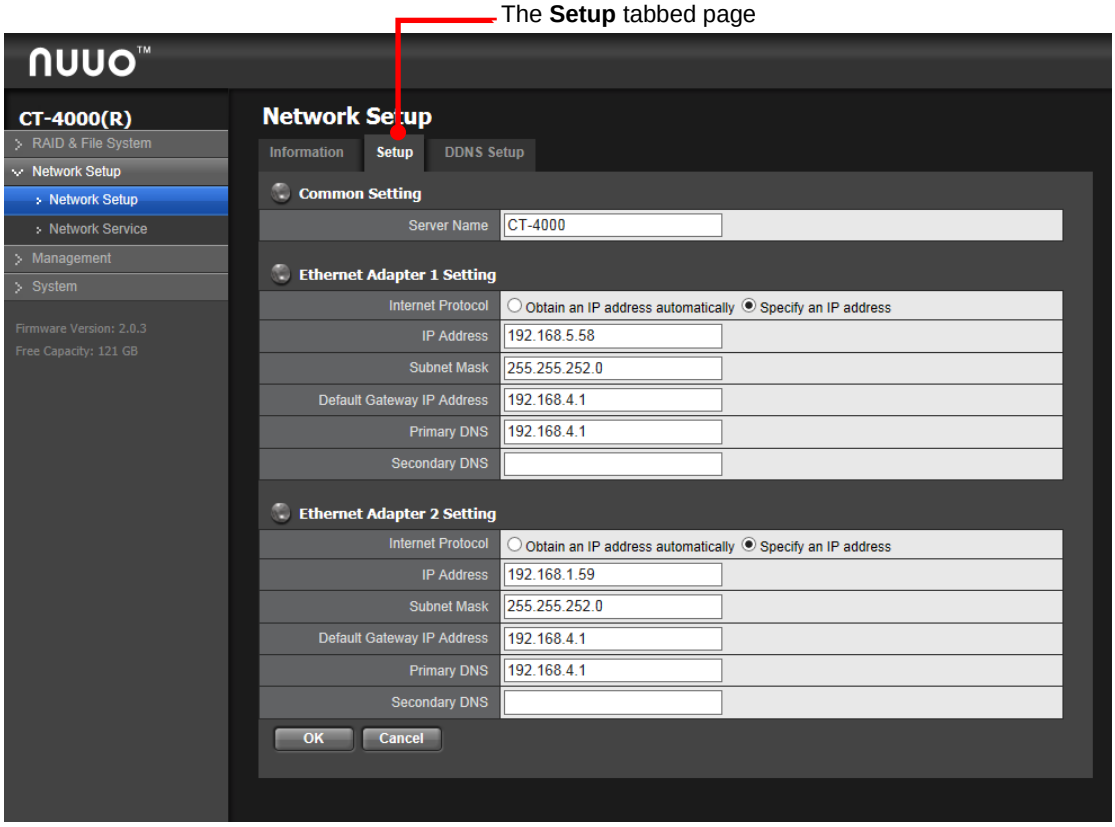
It relies on the **Setup** tabbed page to configure the system's networking.

To access the **Setup** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.
   The web settings open.

2. From the Config Catalog, click the **Network Setup** | **Network Setup** | **Setup** tab.

   The **Setup** tabbed page opens and shows the system's Ethernet adapters in use and the settings.



The featured settings on the **Setup** tabbed page are:

Group	Setting	Description	Default
Common Setting	**Server Name**	Sets the hardware's server name.	--
Ethernet Adapter 1 / 2 Setting	**Internet Protocol**	Sets whether to automatically obtain an IP address (DHCP) or manually specify one (static) for the adapter.	--
	IP Address	Assigns an IP address for the adapter. ▸ This setting is only available when the **Internet Protocol** is set to **Specify an IP address**.	192.168.1.100
	Subnet Mask	Assigns the subnet mask for the adapter's IP address. ▸ This setting is only available when the **Internet Protocol** is set to **Specify an IP address**.	255.255.255.0
	Default Gateway	Assigns the IP address for adapter's the gateway. ▸ This setting is only available when the **Internet Protocol** is set to **Specify an IP address**.	192.168.1.1
	Primary DNS	Assigns the IP address for the primary DNS (Domain Naming System). ▸ This setting is only available when the **Internet Protocol** is set to **Specify an IP address**.	192.168.1.1
	Secondary DNS	Assigns the IP address for the secondary DNS (Domain Naming System). ▸ This setting is only available when the **Internet Protocol** is set to **Specify an IP address**.	--
OK button		Applies the change(s)	--
Cancel button		Recovers the defaults.	--

There are two Ethernet adapters per **Crystal** unit. We recommend that you use them under the scenario of two subnets, one for the cameras/devices, and the other for the remote access. If you deploy two Ethernet adapters within the same subnet, it's likely to cause parts of the cameras disconnected as either one of the adapters disconnected.

3.2.2.1.3 DDNS Setup

The **DDNS Setup** tabbed page enables/disables DDNS, which allows the system to use dynamic IP address. This page also sets the DDNS profile.

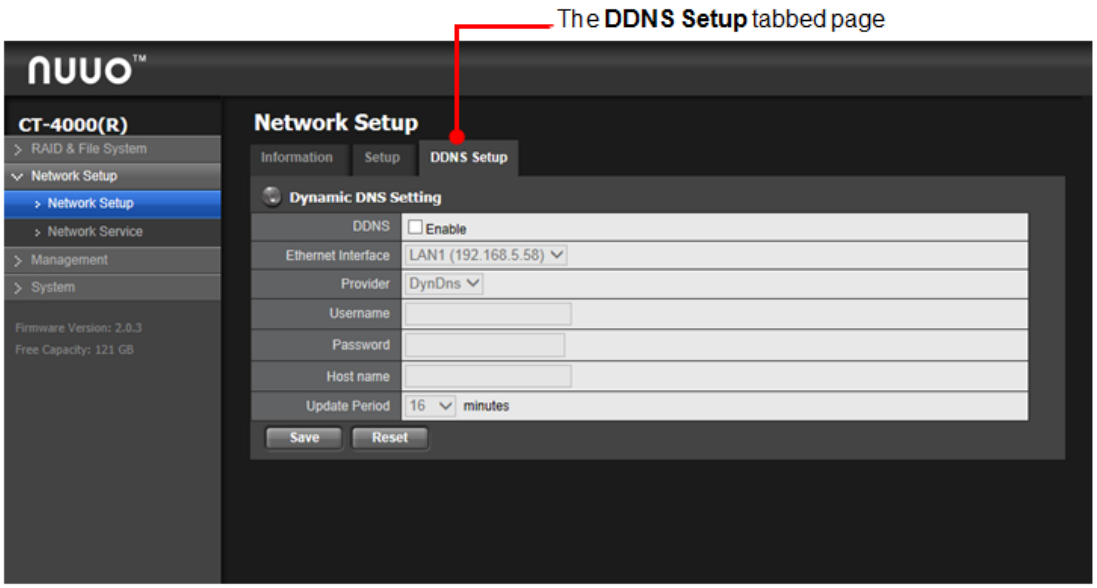
To access the **DDNS Setup** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

The web settings open.

2. From the Config Catalog, click the **Network Setup** | **Network Setup** | **DDNS Setup** tab.

   The **DDNS Setup** tabbed page opens.



The featured settings on the **DDNS Setup** tabbed page are:

Setting	Description	Default
DDNS	Enables/disables DDNS for the system	Deselected (Disabled)
Ethernet Interface	LAN 1 and LAN 2	LAN 1
Provider	Sets the provider of the DDNS service. ▸ Options available are **DynDns** and **DtDNS**.	DynDns
Username	Sets the username to login to the DDNS service.	--
Password	Sets the password to login to the DDNS service.	--
Host Name	Enters the sub domain name.	--
Update Period	Since the IP is dynamic, sets how often to refresh the DNS to point to the server's changing IP address.	16 minutes

3.2.2.2 Network Service

The **Network Service** submenu controls the remote accesses to the system for live view streaming, playback and management.

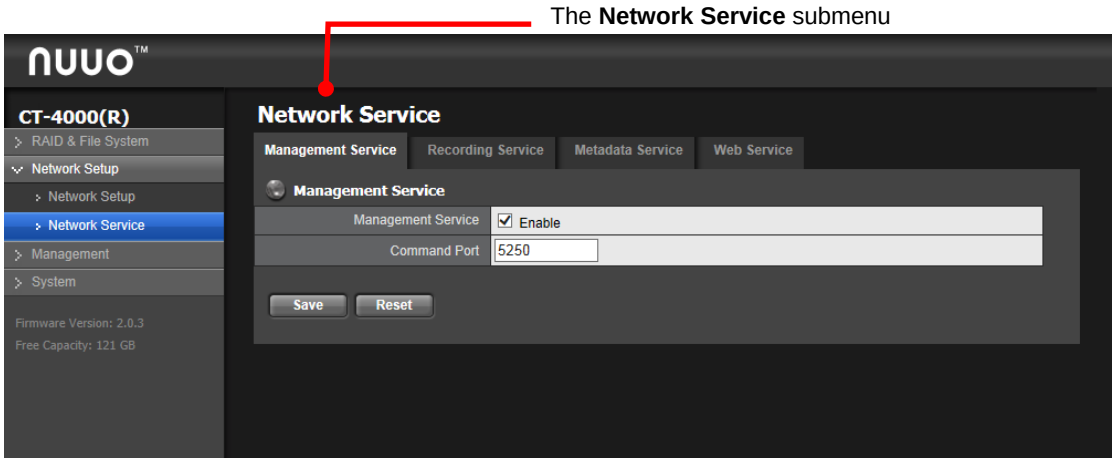
To access the **Network Service** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Config Catalog, click the **Network Setup** | **Network Service**.

   The **Network Service** submenu displays in the Configuration Pane.



The **Network Service** menu features three tabbed pages, Management Service, Recording Service, Metadata Service and Web Service which will be explicated in the following sections.

3.2.2.2.1 Management Service

It relies on the **Management Service** tabbed page to enable the **Crystal** for the **Management Server**.

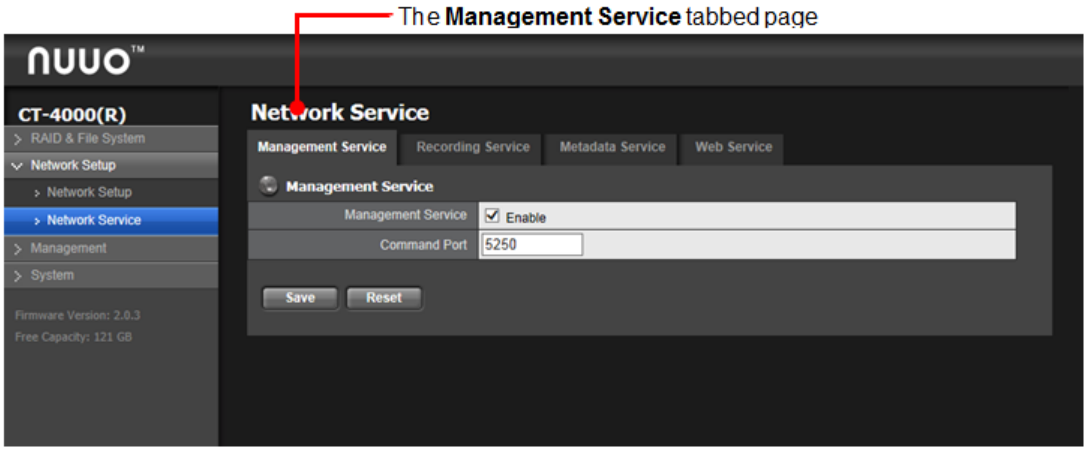
To access the **Management Service** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Toolbar, click the **Network Setup** | **Network Service** | **Management Service** tab.

The **Management Service** tabbed page opens.



The featured settings on the **Management Service** tabbed page are:

Setting	Description	Default
Management Service	Enables/disables the **Crystal** for the **Management Server**.	Selected (Enabled)
command port	Sets the management port.	5250
Save button	Applies the change.	--

	For **Management Server** default Port is 5250(TCP) and the server port should be larger than 1000. Also the command port cannot be the same.

3.2.2.2.2 Recording Service

It relies on the **Recording Service** tabbed page to enable the **Crystal** for the **Recording Server**.

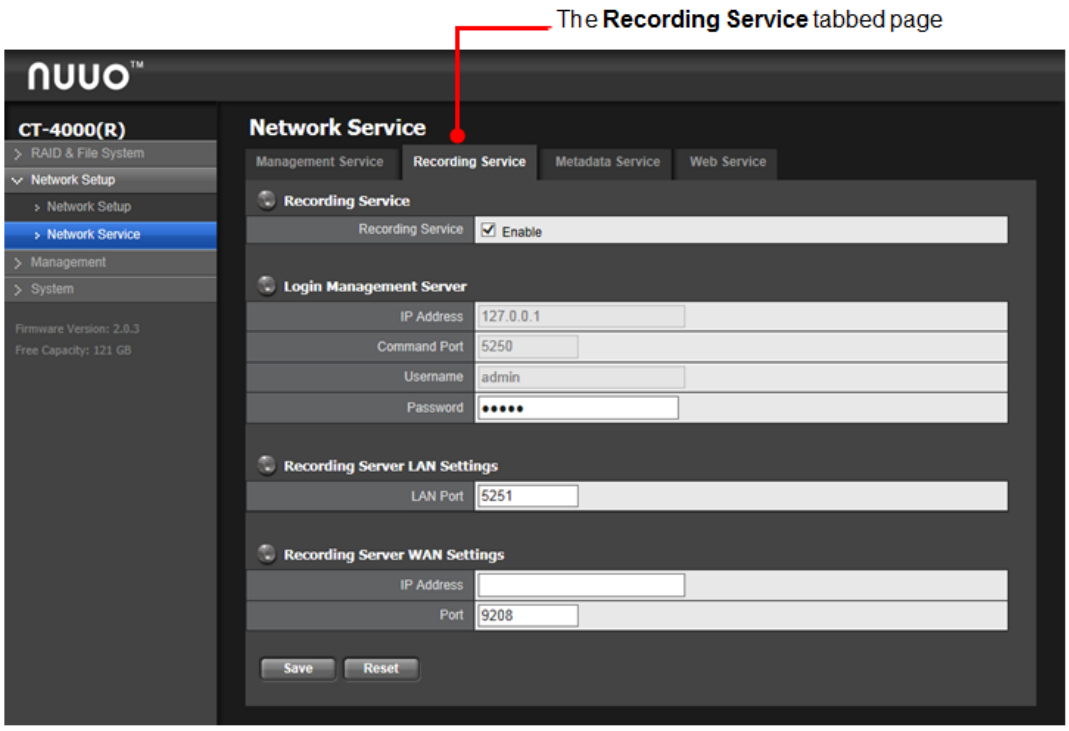
To access the **Recording Service** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

The web settings open.

2. From the Left Toolbar, click the **Network Setup** | **Network Service** | **Recording Service** tab.

The **Recording Service** tabbed page opens



The featured settings on the **Recording Service** tabbed page are:

Group	Setting / Info	Description	Default
Recording service	**Recording service**	Enables/disables the **Crystal** for the **Recording Server**.	Selected (Enabled)
Login Management Server	**IP address**	Enters the IP address of the **Management Server**.	--
	command port	Enters the Management Server port.	5250
	username	Enters the username to login the **Management Server**.	admin
	password	Enters the password to login the **Management Server**.	admin
LAN Settings	**LAN 1 Port**	Enters the LAN port for the **Recording Server**.	5251
WAN Settings	**IP Address**	Enters the IP address of the WAN for the **Recording Server**. ▸ This setting can only work when port forwarding is done. ▸ To use WAN settings, the **Management Server**, **Recording Server** and **Metadata Server** all require port forwarding.	--
	Port	Enters the WAN port for the **Recording Server**. ▸ This setting can only work when port forwarding is done.	--

		▸ To use WAN settings, the **Management Server**, **Recording Server** and **Metadata Server** all require port forwarding.	
Save button		Applies the change.	--

	To use WAN settings, the **Management Server**, **Recording Server** and **Metadata Server** all require port forwarding.
	For **Recording Server** default Port is 5251(TCP) and the server port should be larger than 1000. Also the command port cannot be the same.

3.2.2.2.3 Metadata Service

It relies on the **Metadata Service** tabbed page to enable the **Crystal** for **Metadata Server**.

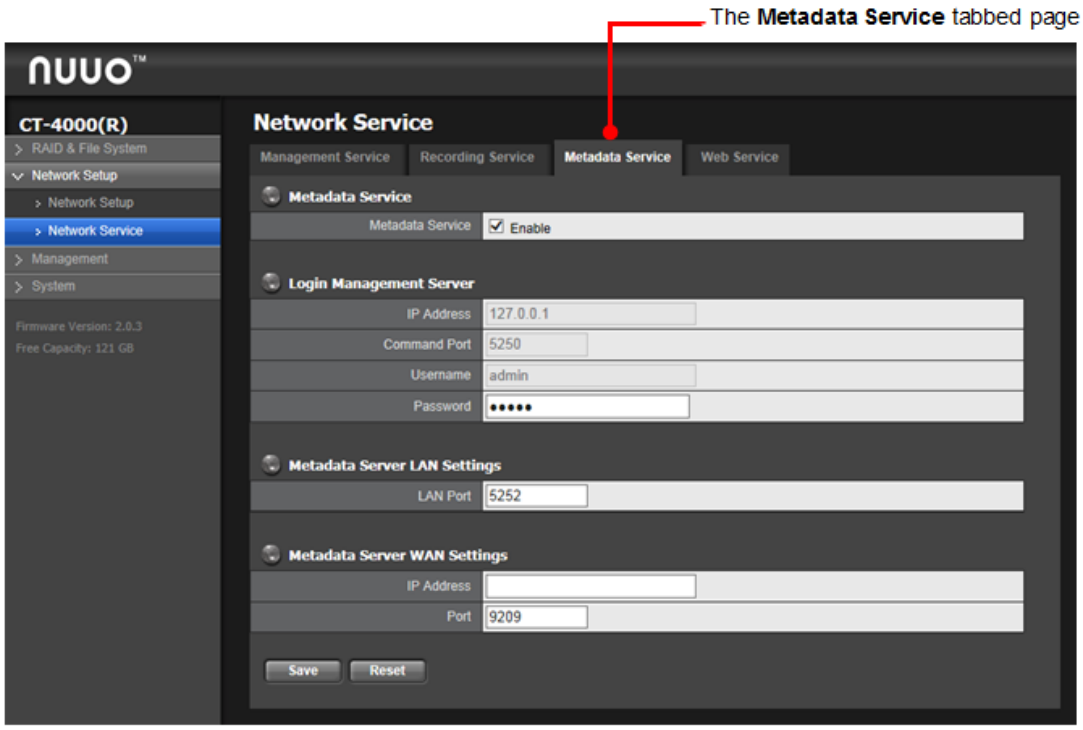
To access the **Metadata Service** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Tool bar, click the **Network Setup** | **Network Service** | **Metadata Service** tab.

The **Metadata Service** tabbed page opens.



The featured settings on the **Metadata Service** tabbed page are:

Group	Setting / Info	Description	Default
Metadata service	**Metadata service**	Enables/disables the **Crystal** for **Metadata Server**.	Selected (Enabled)
Login Management Server	**IP address**	Enters the IP address of the **Management Server**.	--
	command port	Enters the **Management Server** port.	5250
	username	Enters the username to login the **Management Server**.	admin
	password	Enters the password to login the **Management Server**.	admin
LAN Settings	**LAN 1 Port**	Enters the LAN port for the **Metadata Server**.	5252
WAN Settings	**IP Address**	Enters the IP address of the WAN for the **Metadata Server**. ▸ This setting can only work when port forwarding is done. ▸ To use WAN settings, the **Management Server**, **Recording Server** and **Metadata Server** all require port forwarding.	--
	Port	Sets the WAN port for the **Metadata Server**. ▸ This setting can only work when port forwarding is done. ▸ To use WAN settings, the **Management Server**, **Recording**	--

		Server and **Metadata Server** all require port forwarding.	
Save button		Applies the change.	--

	To use WAN settings, the **Management Server**, **Recording Server** and **Metadata Server** all require port forwarding.
	For **Metadata Server** default Port is 5252(TCP) and the server port should be larger than 1000. Also the command port cannot be the same.

3.2.2.2.4 Web Service

It relies on the **Web Service** tabbed page to setup the **Crystal** web server port.

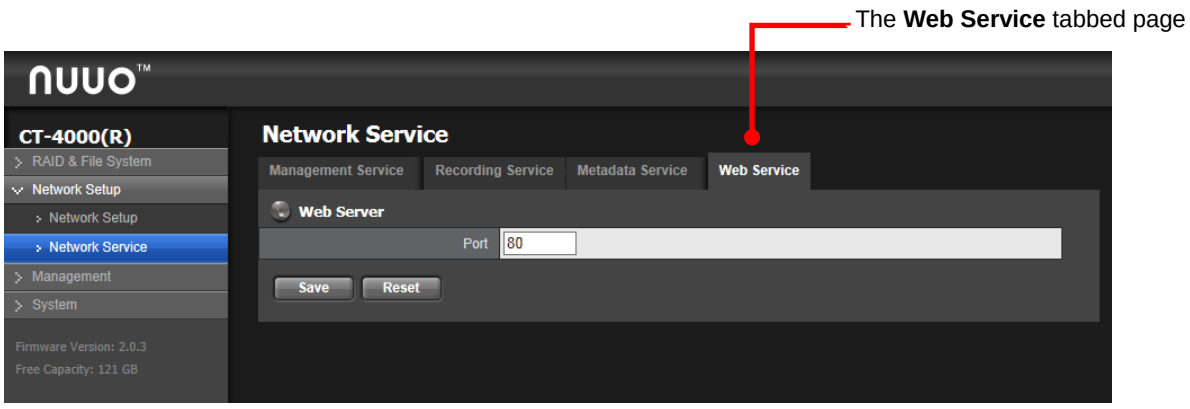
To access the **Web Service** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

The web settings open.

2. From the Left Tool bar, click the **Network Setup** | **Network Service** | **Web Service** tab.

The **Web Service** tabbed page opens.



The featured settings on the **Management Service** tabbed page are:

Setting	Description	Default
command port	Sets the web port.	80
Save button	Applies the change.	--

	For **Web Server** default Port is 80. Also the command port cannot be the same. If utilizing Firefox, it's suggested not to modify the web service port due to Firefox limitation.

3.2.3 Management

It relies on the **Management** menu to change the password to the system, to view the system's hardware logs, and to recover factory defaults.

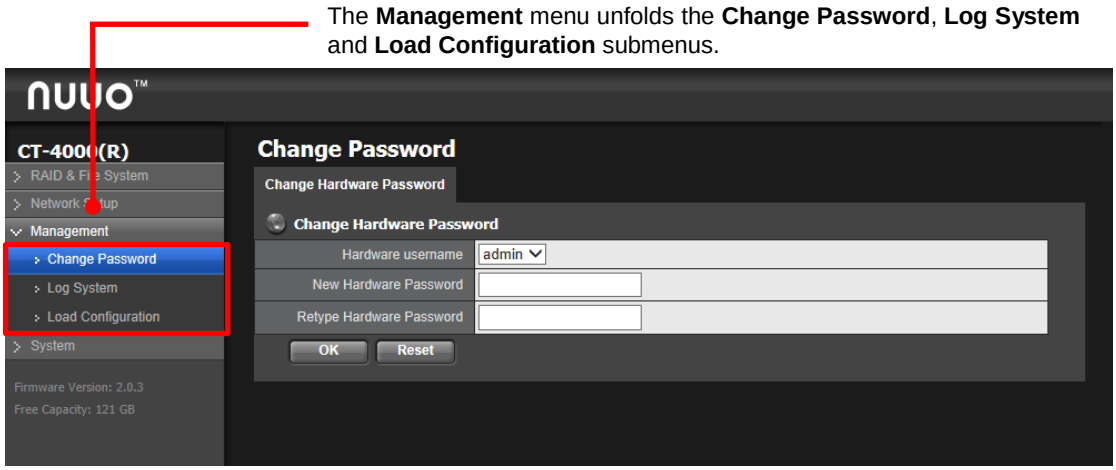
To access the **Management** menu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Toolbar, click the **Management**.

   The **Management** menu unfolds the **Change Password**, **Log System** and **Load Configuration** submenus.



The features submenus are Change Password, Log System and Load Configuration which will be explicated in the following sections.

3.2.3.1 Change Password

Use the **Change Password** to change the password to login the **Crystal hardware**.

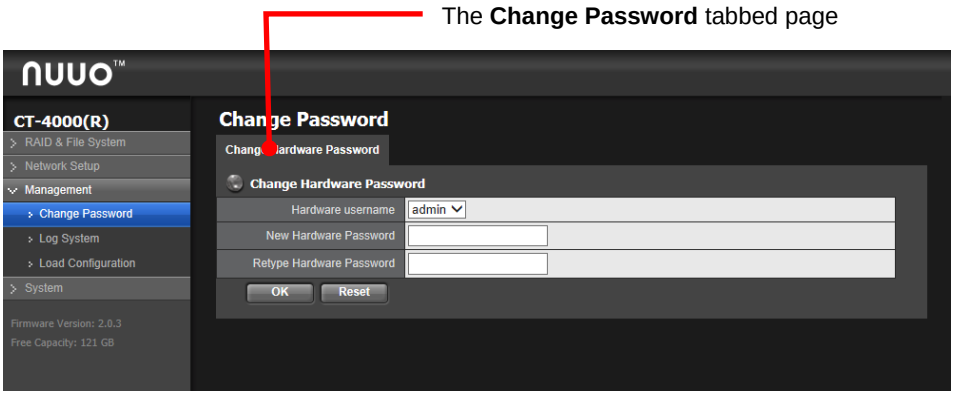
To access the **Change Password** submenu:

3. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

4. From the Left Toolbar, click the **Management** | **Change Password**.

   The **Change Password** tabbed page displays in the Configuration Pane.



3.2.3.2 Log System

The **Log System** submenu allows users to view the **Management Server's** hardware logs including power-on, shutdown, storage activity and so on.

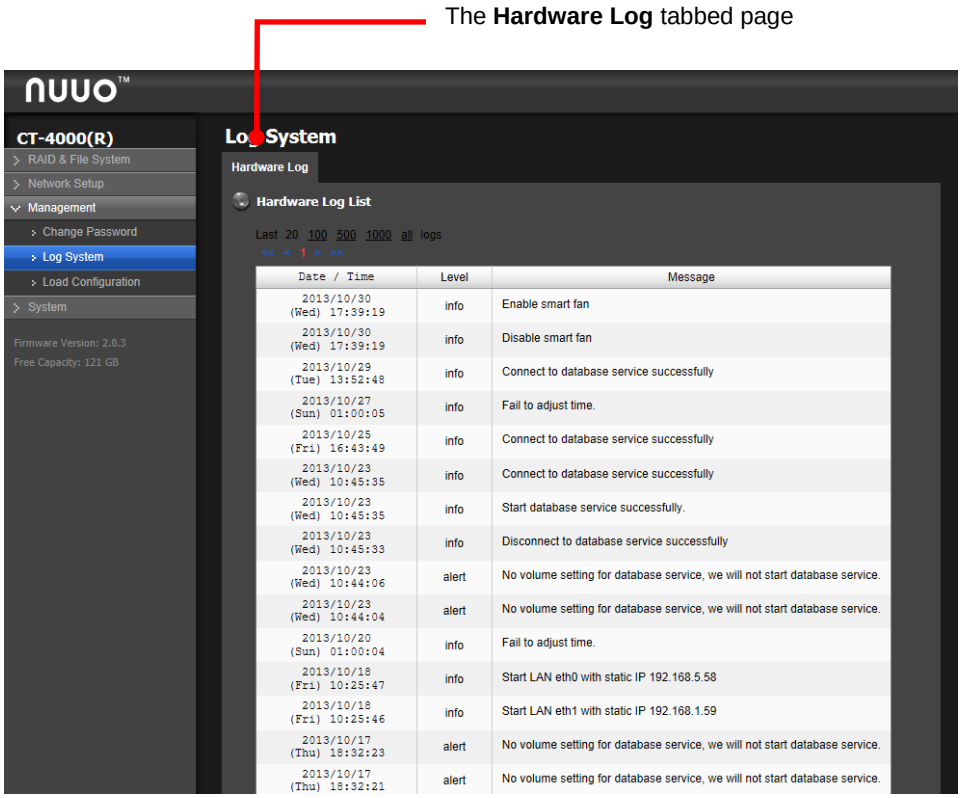
To access the **Log System** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Toolbar, click the **Management** | **Log System**.

The **Hardware Log** tabbed page opens in the Configuration Pane showing a list of the **Management Server's** hardware logs.


The Hardware Log tabbed page
CT-4000(R)
RAID & File System
Network Setup
Management
Change Password
Log System
Load Configuration
System
Firmware Version: 2.0.3
Free Capacity: 121 GB
Log System
Hardware Log
Hardware Log List
Last 20 100 500 1000 all logs
Date / Time
Level
Message
2013/10/30 (Wed) 17:39:19 info Enable smart fan
2013/10/30 (Wed) 17:39:19 info Disable smart fan
2013/10/29 (Tue) 13:52:48 info Connect to database service successfully
2013/10/27 (Sun) 01:00:05 info Fail to adjust time.
2013/10/25 (Fri) 16:43:49 info Connect to database service successfully
2013/10/23 (Wed) 10:45:35 info Connect to database service successfully
2013/10/23 (Wed) 10:45:35 info Start database service successfully.
2013/10/23 (Wed) 10:45:33 info Disconnect to database service successfully
2013/10/23 (Wed) 10:44:06 alert No volume setting for database service, we will not start database service.
2013/10/23 (Wed) 10:44:04 alert No volume setting for database service, we will not start database service.
2013/10/20 (Sun) 01:00:04 info Fail to adjust time.
2013/10/18 (Fri) 10:25:47 info Start LAN eth0 with static IP 192.168.5.58
2013/10/18 (Fri) 10:25:46 info Start LAN eth1 with static IP 192.168.1.59
2013/10/17 (Thu) 18:32:23 alert No volume setting for database service, we will not start database service.
2013/10/17 (Thu) 18:32:21 alert No volume setting for database service, we will not start database service.

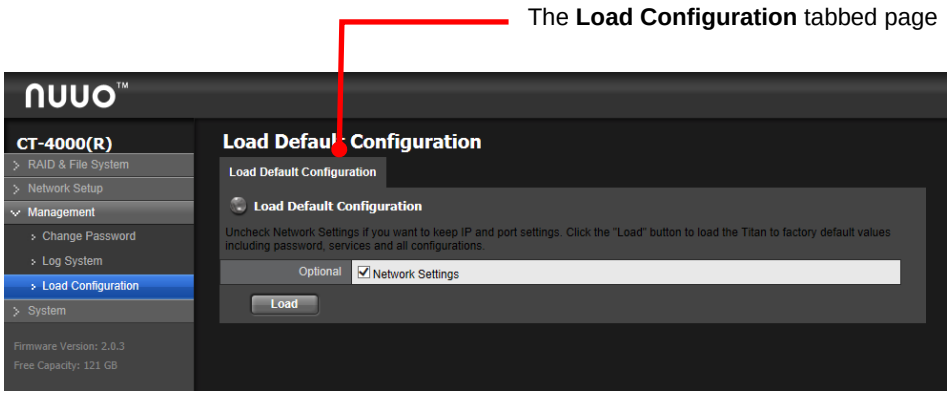
3.2.3.3 Load Configuration

The **Load Configuration** submenu allows users to restore the system settings to factory defaults.

To access the **Load Configuration** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.
   The web settings open.

2. From the Left Toolbar, click the **Management** | **Load Configuration**.
   The **Load Configuration** tabbed page opens in the Configuration Pane.



Group	Setting / Info	Description	Default
Load Default Settings	**Network Settings**	Enables/disables the restoration of the network settings.	Selected (Enabled)
Load button		Runs the restoration of system settings.	--

3.2.4 System

Use the **System** menu to view system information, configure system settings and manage system upgrade. This menu also enables re-opening the **Installation Wizard** which launches during the system's very first power-on.

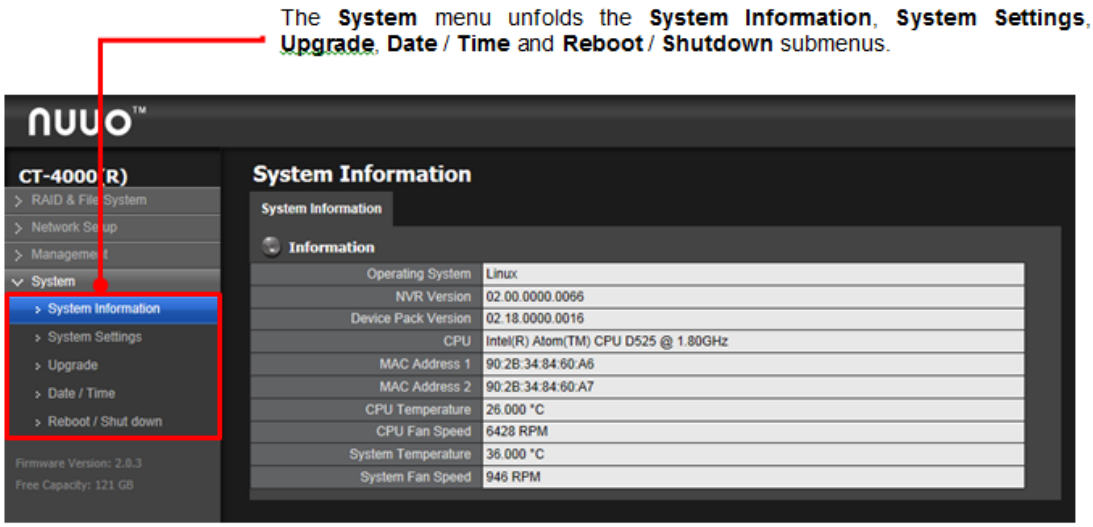
To access the **System** menu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Toolbar, click the **System**.

   The **System** menu unfolds the **System Information**, **System Settings**, **Upgrade**, **Date/ Time** and **Reboot / Shut down** submenus.



The features submenus are System Information, System Settings, Upgrade, Date / Time and Reboot / Shut down which will be explicated in the following sections.

3.2.4.1 System Information

The **Information** submenu enables viewing some important system information including the hardware information and firmware information.

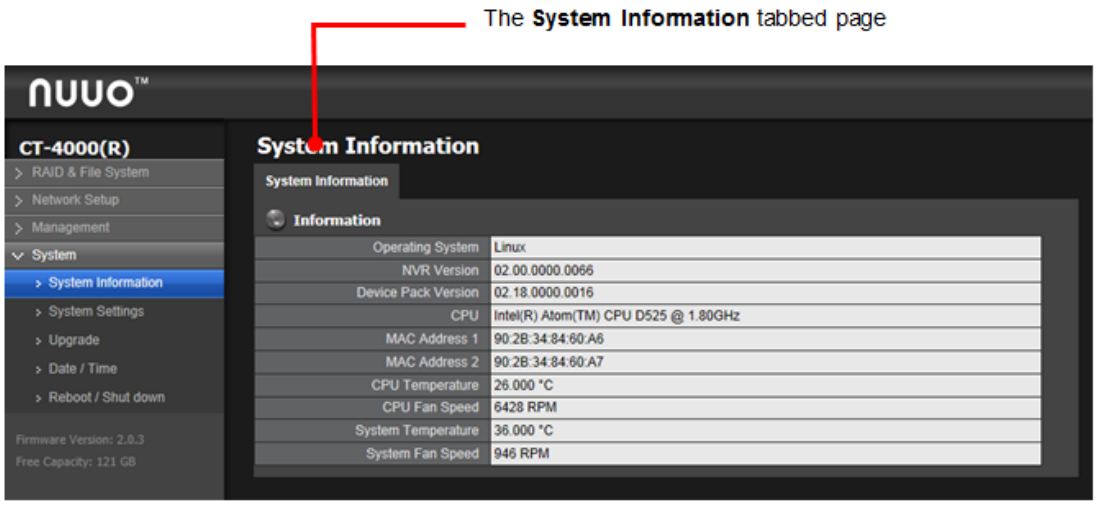
To access the **System Information** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Toolbar, click the **System** | **System Information**.

   The **System Information** tabbed page displays in the Configuration Pane.



3.2.4.2 System Settings

Use the **System Settings** submenu to configure and optimize the system for your applications.

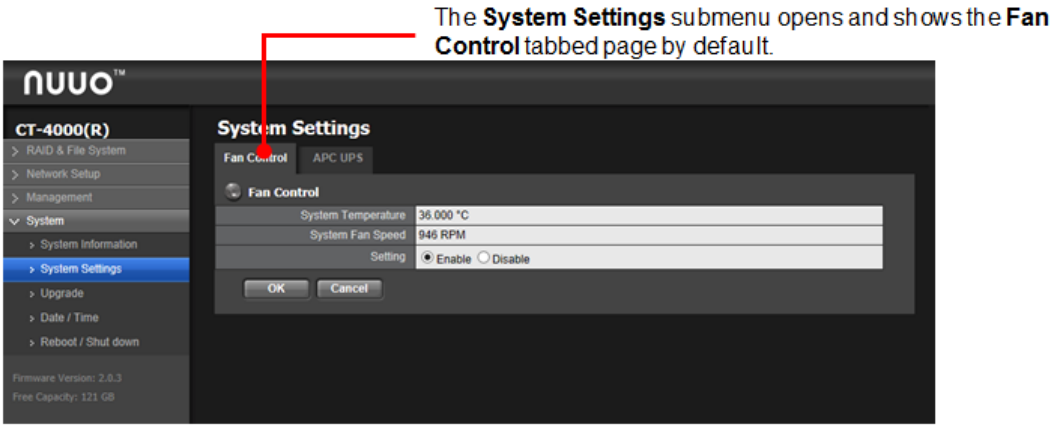
To access the **System Settings** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Toolbar, click the **System** | **System Settings**.

   The **System Settings** submenu opens in the Configuration Pane and shows the **Fan Control** tabbed page by default.



The featured tabbed pages are Fan Control and APC UPS which will be explicated in the following sections.

3.2.4.2.1 Fan Control

The **Fan Control** tab page enables viewing some important system information including system temperature, system fan speed and setting information.

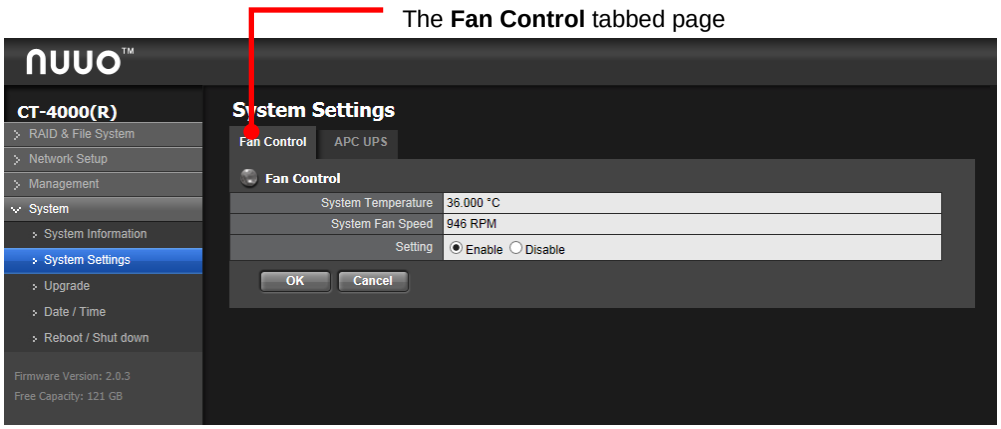
To access the **Fan Control** tabbed page:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Toolbar, click the **System** | **System Settings** |**Fan Control** tabbed page.

   The **Fan Control** tabbed page opens.



The featured settings and delivered info are:

Group	Setting	Description	Default
Fan Control	**System Temperature**	Delivers the system temperature.	--
	System Fan Speed	Delivers the system fan speed.	--
	Setting	Delivery the setting status	disable
OK button		Applies the change.	--

Cancel button	Clears the change.	--

3.2.4.2.2 APC UPS

If the Crystal is used with an UPS module, it is able to deal with accidental power failure or unstable power supply. The **APC UPS** tabbed page configures how the system reacts to such scenario by defining the timing for auto shutdown with APC Uninterruptable Power Supply (UPS) battery power. This tabbed page also delivers the info about the APC UPS module used.

To access the **APC UPS** setting:

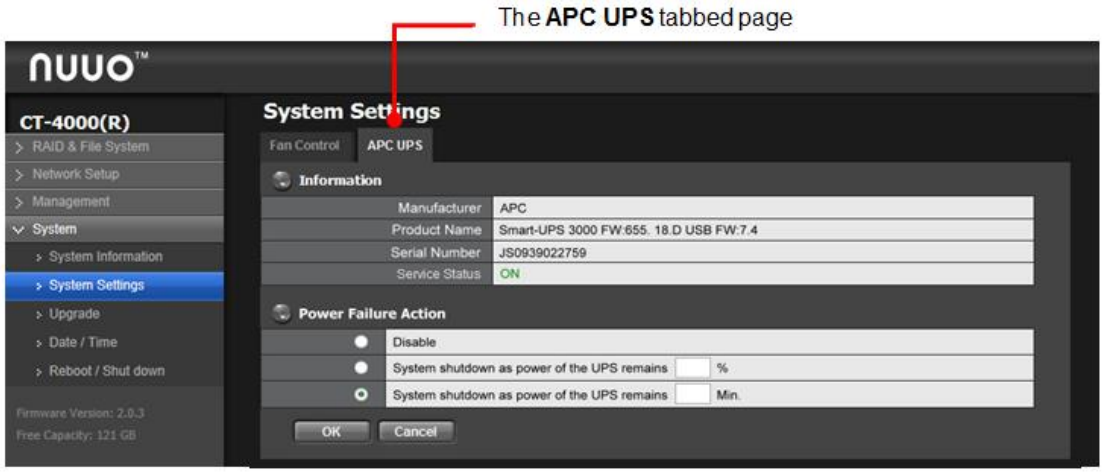
1. Attach the APC UPS to one of the unit's USB ports.

2. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

3. From the Left Toolbar, click the **System** | **System Settings** |**APC UPS** tabbed page.

   The **APC UPS** tabbed page opens.



The featured settings and delivered info are:

Group	Setting	Description	Default
Information	**Manufacturer**	Delivers the manufacturer of the UPS module.	--
	Product Name	Delivers the model name of the UPS module.	--

	Serial Number	Delivers the serial number of the UPS module.	--
	Services Status	Delivers if the UPS module is servicing.	--
Power Failure Action	**Disable**	Enables/disables the operating system's actions to deal with power failure.	Selected (Disabled)
	Shutdown as power of the UPS remains _ %	Sets how low does the UPS battery power drain down to before the operating system shuts down.	--
	Shutdown as power of the UPS remains _min	Sets how long should the unit run on UPS battery power before the operating system shuts down.	--
OK button		Applies the change.	--
Exit button		Clears the change.	--

For **Power Failure Action**, an USB connection is needed between the unit and the UPS to check the status of UPS.

3.2.4.3 Upgrade

Exactly as the title advertises, the **Upgrade** tabbed page enables firmware or Device Pack upgrade to bring the system to a newer version that promises better performance, new functions or camera support. Besides, this tabbed page also delivers the current firmware version and Device Pack version.

	It is suggested to backup system configurations before upgrading system. Refer to Config Export for detailed process.

To access the **Upgrade** setting:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

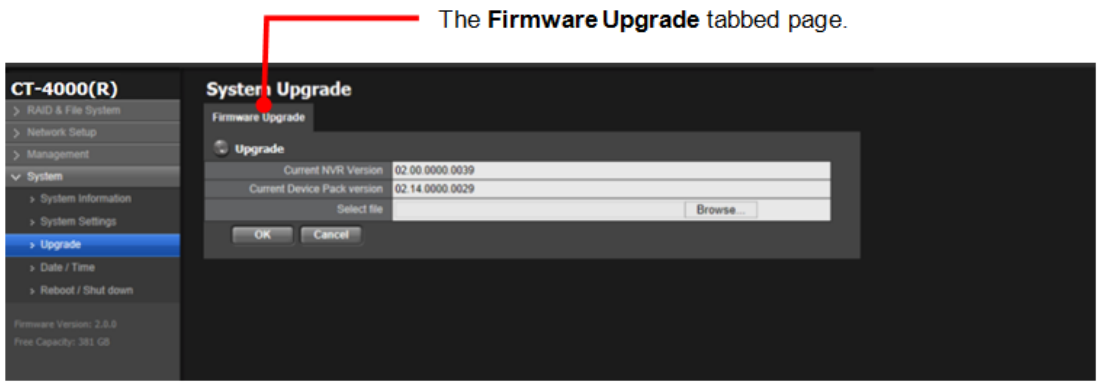
2. From the Left Toolbar, click the **System** | **Upgrade**.

3. Go to www.nuuo.com for firmware or device pack downloading. Browse the FW for upgrading and click the **OK** button.

4. A confirmation dialog pops up. Click the **OK** button to start upgrade process.

5. After upgrade, the system will restart. You need to re-access the unit again after this.

   The **Firmware Upgrade** tabbed page opens in the Configuration Pane.



The featured facility and delivered info are:

Info / Facility	Description
Current NVR Version	Delivers the server's current firmware version.
Current Device Pack Version	Delivers the server's current device pack version.
Select File (and the **Browse** button**)**	Browses for the firmware and runs the upgrade.

	The FW upgrade includes Crystal server FW upgrade and device pack upgrade. You can upgrade camera device pack to add camera in device pack new version without upgrade Crystal FW.
	The network bandwidth should be more than 4 mbps when upgrading firmware.

3.2.4.4 Date / Time

Access the **Date/Time** submenu to configure the date, time, time zone of your locale and other time-related parameters for the server.

To access the **Date/Time** setting:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Tool bar, click the **System** | **Date/Time**.

3. Choose the time zone.

4. Configure the year, month, day and time manually, or enable Network Time to synchronize time automatically. When Network Time enabled, the date/time settings will be grayed out.

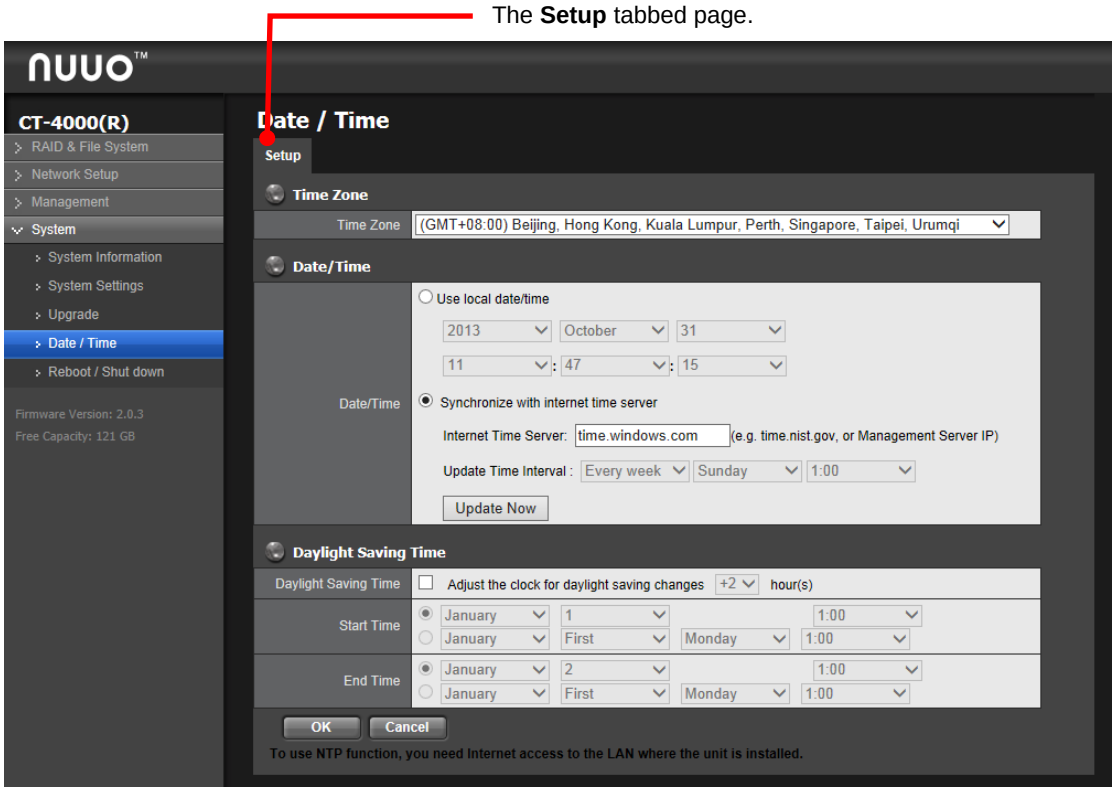
5. Assign time server and update interval if choosing to synchronize with internet time server. You can also click "**Update Now**" to update date/ time right away.

6. Check the Adjust clock for daylight saving changes option and select the time

change of daylight saving time in your location. Choose the start time and end time of recurrence.

7. Click the **OK** button to restart the system.

The **Setup** tabbed page opens in the Configuration Pane.



The featured settings are:

Time Zone	Time Zone	Sets the time zone of your locale.		GMT+08:00
NTP Setup	**Network Time**	**Enable** check box	Enables/disables network time.	Deselected (Disabled)
		Synchronize with internet time server	Enables/disables the synchronization with internet time server. ▸ This setting is only available when network time is enabled. ▸ When enabled, the **Date/Time** group box become unavailable.	Deselected (Disabled)
		Works as internet time server		
	Time Server	Sets the time server name or IP address. ▸ This setting is only available when network time is enabled.		--

	Update Now button	Updates the system time immediately. ▸ This setting is available only when network time is enabled. ▸ Updating system time will cause the system to restart.		Weekly on Sunday, at 01:00 o'clock
Date / Time	**Year**	Sets system date and time.		
	Month			
	Day			
	Time			
Daylight Saving Time	**Daylight Saving Time**	Adjust the clock for daylight saving changes	Enables/disables daylight saving time.	Deselected (Disabled)
		hours drop box	Defines how much time should the system time be adjusted forward/backward for.	+ 2 hours
	Start Time	Defines the date to start applying daylight saving time. ▸ This setting is available only when daylight saving time is enabled.		January the 1st, 1:00 AM
	End Time	Defines the date to stop applying daytime saving time. ▸ This setting is available only when daylight saving time is enabled.		January the 2nd, 1:00 AM
Save button		Applies the change.		--
Exit button		Clears the change.		--

3.2.4.5 Reboot / Shut down

Access this **Reboot / Shutdown** submenu to safely turn off or restart the system.

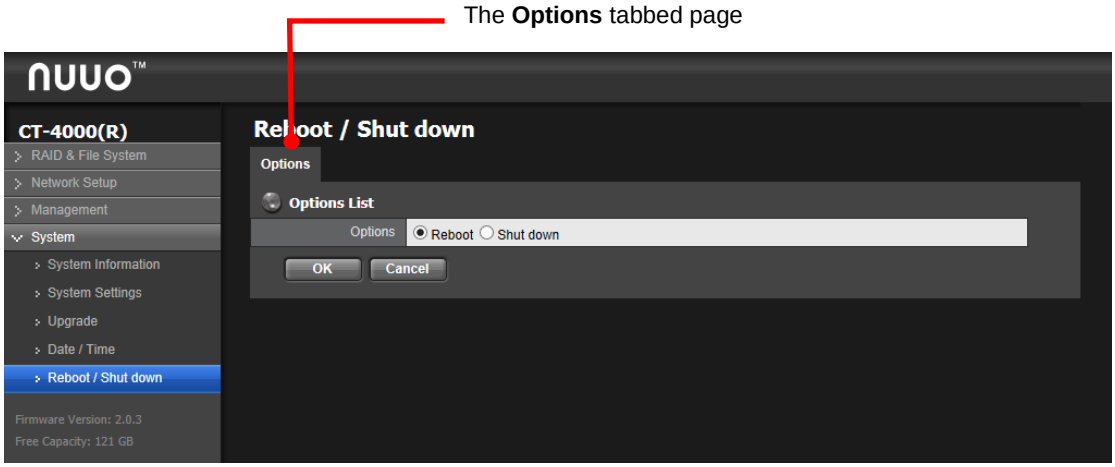
To access the **Reboot / Shutdown** submenu:

1. Login to **NUUO Crystal™ Network Video Recorder** web page as described in Login.

   The web settings open.

2. From the Left Tool bar, click the **System** | **Reboot / Shutdown**.

The **Options** tabbed page displays in the Configuration Pane.



3. Select **Reboot** or **Shutdown** and click the **OK** button to restart or power off the system.

3.3 Management Server

Log in **Management Server** to view live viewing video, playback, or configure the system through the web-based interface.

The feature settings are same with NuClient, please refer to Interface Overview.

	The logging in username and password is Management Server's username and password.
	Install CrystalNuClientWeb.cab first to view the video on web client.

4. Application Installation

NuClient is the software that enables **Management Server** for **Live View** (instant video viewing), **Playback** (recorded video playback) and **Config** (system configuration). **NuMatrix** (Ultimate level only) is the software that enables video wall for **Live View**.

This section will walk you through the installations of the **NuClient** and **NuMatrix**, in both **Windows** O.S. and **Mac** O.S.

	Only when have an "Ultimate level" license will you be able to see the Matrix interface on NuClient**.**

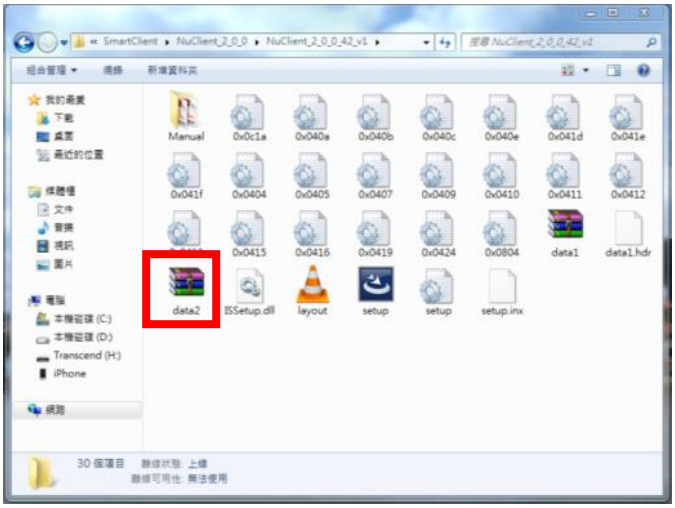
4.1 NuClient

4.1.1 Install on Windows OS

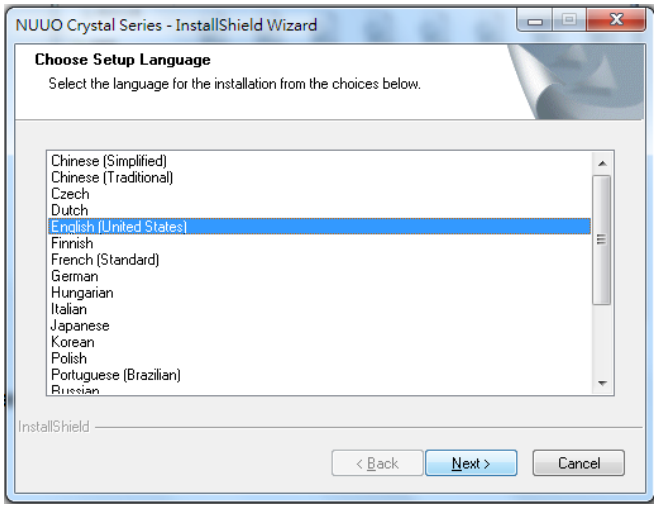
This section will walk you through the installation of the **NuClient** in Windows operating system.

4.1.1.1 Proceed to Install

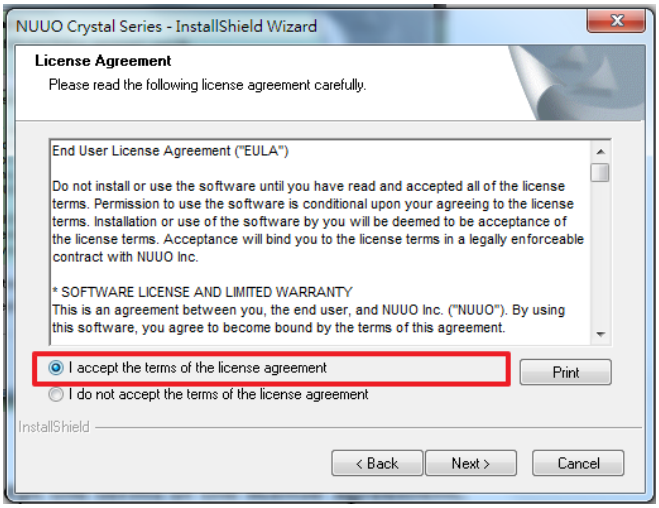
1. Insert the CD into your CD-ROM drive and double-click **Setup.exe**.
   The installer then opens.



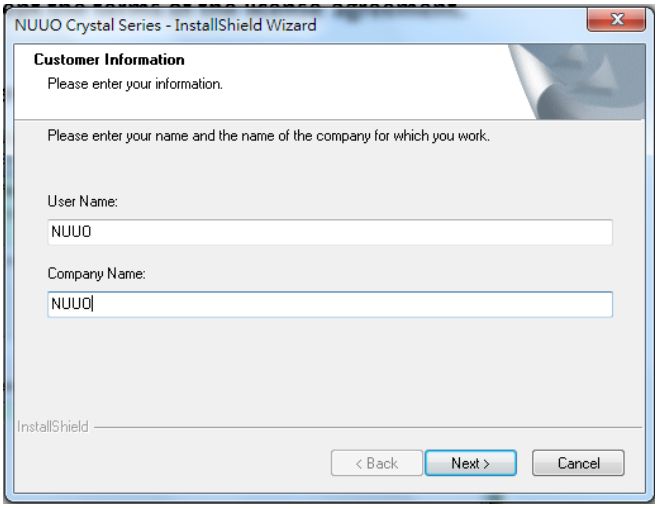
2. Choose the language and click the **Next** button to proceed.



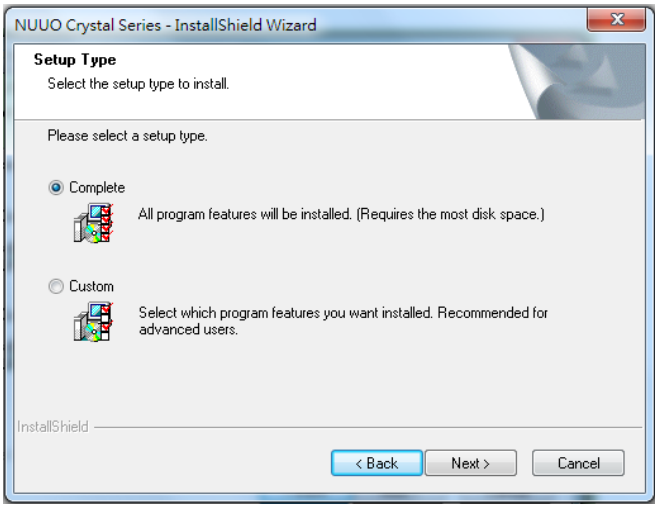
3. The **License Agreement** opens.
   Select **I accept the terms of the license agreement.**

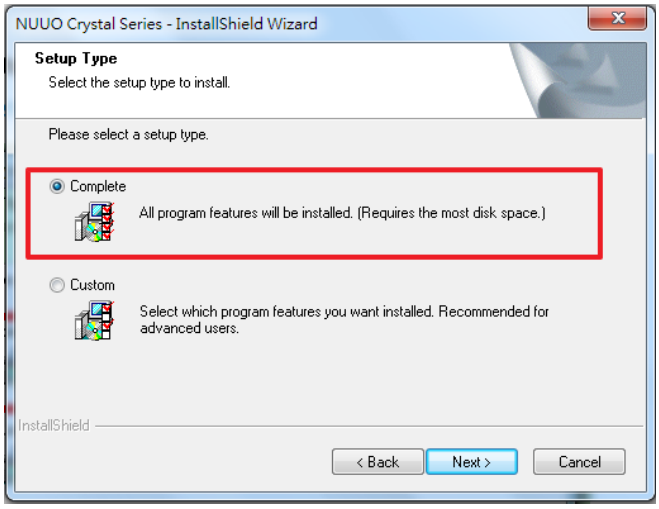

NUUO Crystal Series - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
End User License Agreement ("EULA")
Do not install or use the software until you have read and accepted all of the license terms. Permission to use the software is conditional upon your agreeing to the license terms. Installation or use of the software by you will be deemed to be acceptance of the license terms. Acceptance will bind you to the license terms in a legally enforceable contract with NUUO Inc.
* SOFTWARE LICENSE AND LIMITED WARRANTY
This is an agreement between you, the end user, and NUUO Inc. ("NUUO"). By using this software, you agree to become bound by the terms of this agreement.
I accept the terms of the license agreement
I do not accept the terms of the license agreement
Print
InstallShield
< Back
Next >
Cancel

4. A **Customer Information** window opens.
   Enter your name and the name of your company. Then click the **Next** button.

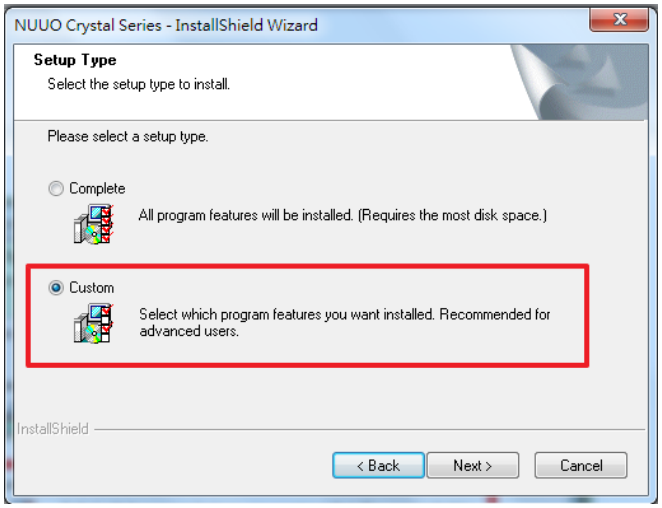


5. A **Setup Type** window then opens and presents two types of installation.
   Select **Complete** and click the **Next** button to proceed.
   OR
   Select **Custom** and click the **Next** button to proceed.
   - **Complete**: To install all applications in this package. (Including NuClient, NuMatrix, Backup Player, Offline license tool, Installation Wizard, Verification tool)


NUUO Crystal Series - InstallShield Wizard
Setup Type
Select the setup type to install.
Please select a setup type.
Complete
All program features will be installed. (Requires the most disk space.)
Custom
Select which program features you want installed. Recommended for advanced users.
InstallShield
< Back
Next >
Cancel


NUUO Crystal Series - InstallShield Wizard
Setup Type
Select the setup type to install.
Please select a setup type.
Complete
All program features will be installed. (Requires the most disk space.)
Custom
Select which program features you want installed. Recommended for advanced users.
InstallShield
< Back
Next >
Cancel

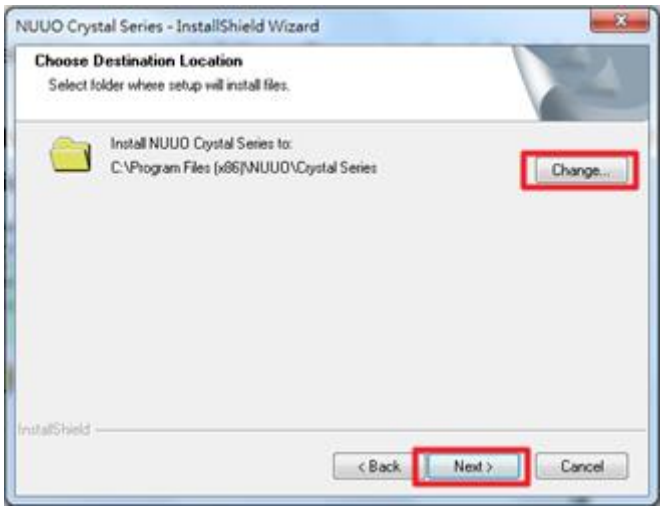
- **Custom**: To install a custom selection of applications and to configure the installation directory.


NUUO Crystal Series - InstallShield Wizard
Setup Type
Select the setup type to install.
Please select a setup type.
Complete
All program features will be installed. (Requires the most disk space.)
Custom
Select which program features you want installed. Recommended for advanced users.
InstallShield
< Back
Next >
Cancel

6. Click the **Next** button to install the software to the default folder.

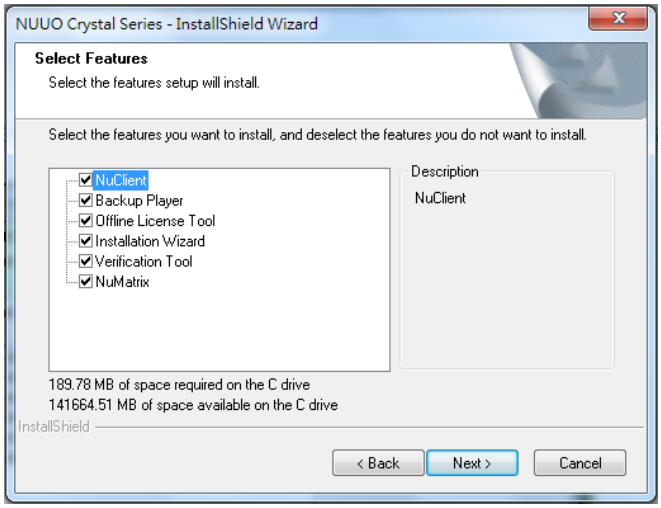
   OR

   Click the **Change** button and browse for some other folder to install the software to. Then click the **Next** button to proceed.

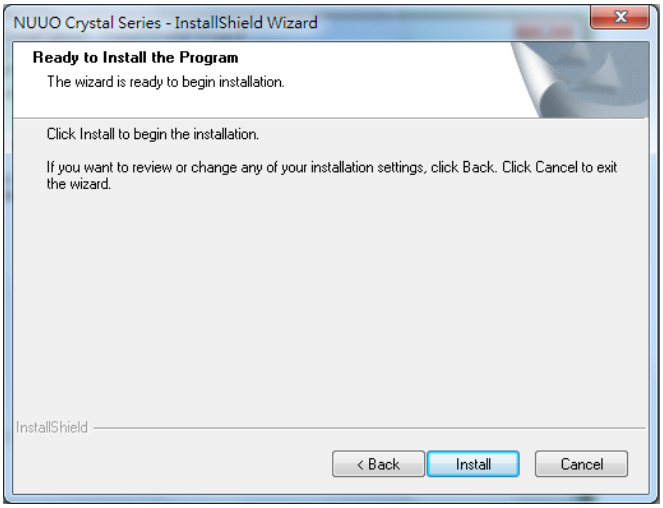


7. A **Select Features** window then opens.

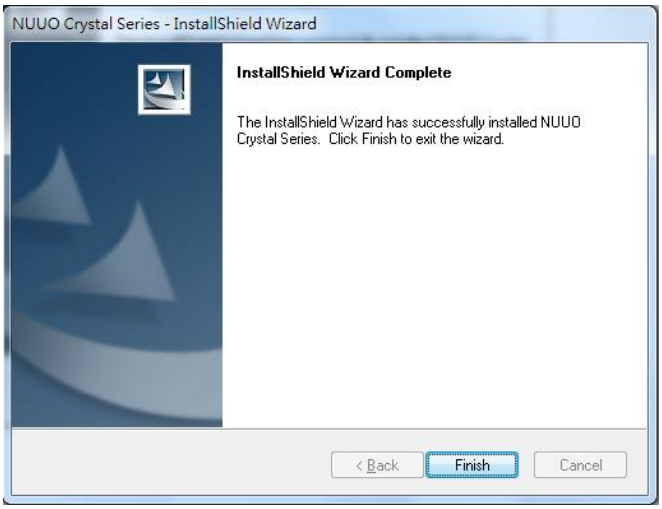
   Select the application(s) to install and deselect the application (s) that you don't want. Then click the **Next** button to proceed.


NUUO Crystal Series - InstallShield Wizard
Select Features
Select the features setup will install.
Select the features you want to install, and deselect the features you do not want to install.
NuClient
Backup Player
Offline License Tool
Installation Wizard
Verification Tool
NuMatrix
Description
NuClient
189.78 MB of space required on the C drive
141664.51 MB of space available on the C drive
InstallShield
< Back
Next >
Cancel

8. Then click the **Install** button.


NUUO Crystal Series - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

The installation then starts, progresses and finishes.


NUUO Crystal Series - InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed NUUO Crystal Series. Click Finish to exit the wizard.
< Back
Finish
Cancel

4.1.1.2 Launch NuClient in Windows OS

As soon as the system is successfully installed, a shortcut to launch the software becomes available at the **Start** button | **All Programs**.

4.1.2 Install on MAC OSX

This section will walk you through the installation of the **NuClient** in MAC operating system.

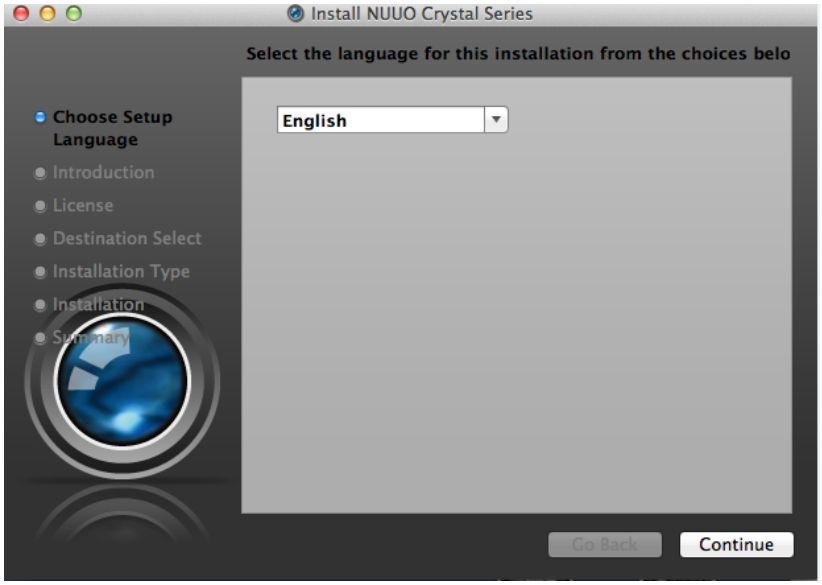
4.1.2.1 Proceed to Install

	We suggest that you avoid using on-board graphics card which will give you a poor performance. NuClient may pop up an error dialog saying **"Videos cannot be displayed on the Client PC with on-board graphic card"** for using an on-board graphics card. We also recommend that the drivers of graphics cards be upgraded to the latest versions.
	The system requires OpenGL 2.0 or higher versions to be installed. An error message will pop up if OpenGL 2.0 or higher versions are not found.
	The minimum supported screen resolution 1024x768. NuClient will not run under the minimum resolution.

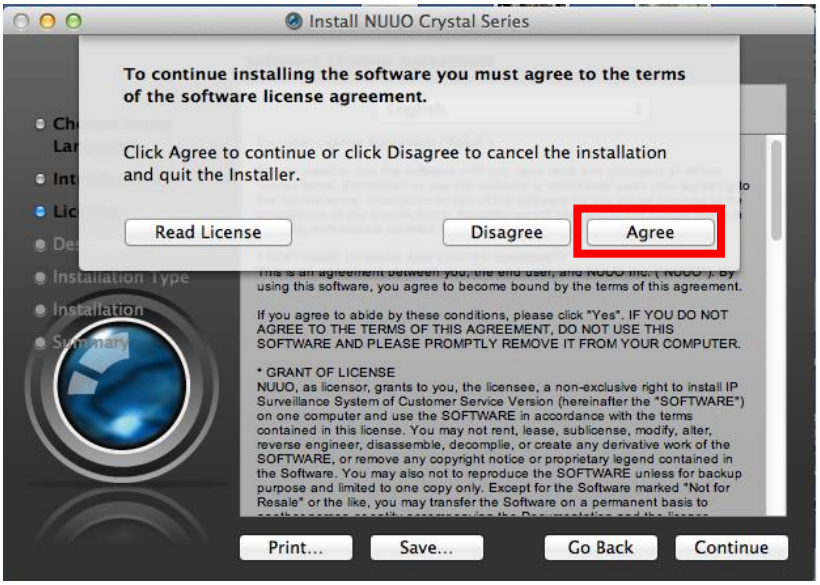
1. Insert the CD into your CD-ROM drive and double-click **NUUO Crystal Series.mpkg** to begin installation.

The installer then opens.

2. Choose your **language** and click **Continue** button.

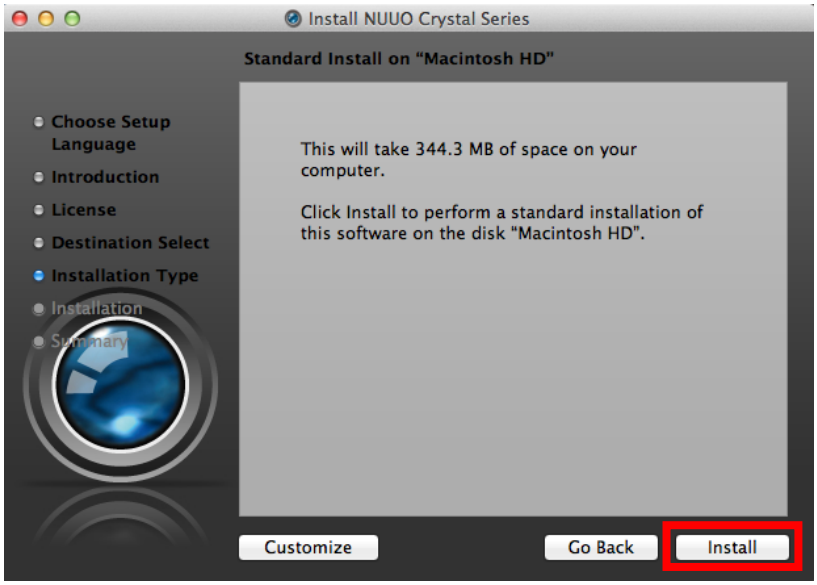


3. Click the **Continue** button and accept the **License Agreement**.

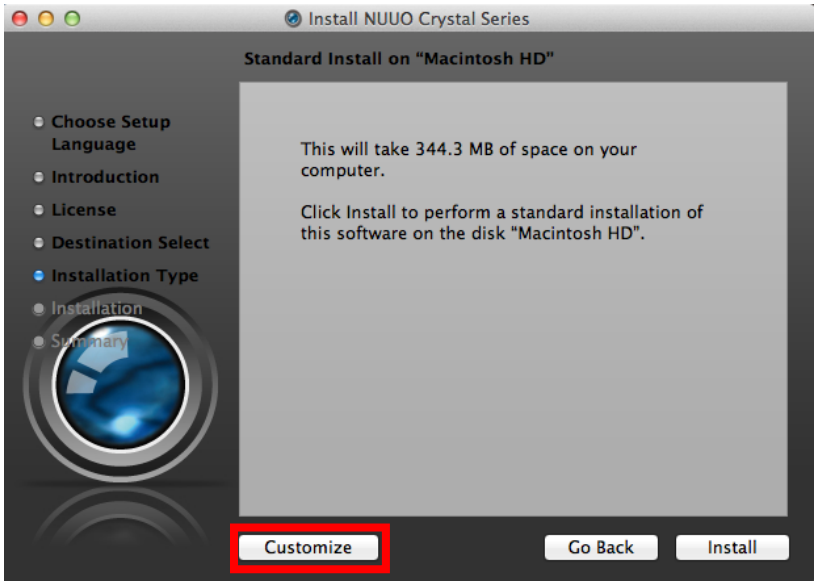

Install NUUO Crystal Series
To continue installing the software you must agree to the terms of the software license agreement.
Click Agree to continue or click Disagree to cancel the installation and quit the Installer.
Read License
Disagree
Agree
using this software, you agree to become bound by the terms of this agreement.
If you agree to abide by these conditions, please click "Yes". IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, DO NOT USE THIS SOFTWARE AND PLEASE PROMPTLY REMOVE IT FROM YOUR COMPUTER.
* GRANT OF LICENSE
NUUO, as licensor, grants to you, the licensee, a non-exclusive right to install IP Surveillance System of Customer Service Version (hereinafter the "SOFTWARE") on one computer and use the SOFTWARE in accordance with the terms contained in this license. You may not rent, lease, sublicense, modify, alter, reverse engineer, disassemble, decomplie, or create any derivative work of the SOFTWARE, or remove any copyright notice or proprietary legend contained in the Software. You may also not to reproduce the SOFTWARE unless for backup purpose and limited to one copy only. Except for the Software marked "Not for Resale" or the like, you may transfer the Software on a permanent basis to
Print...
Save...
Go Back
Continue

4. You can choose two types of installation, **Install** and **Customize**.

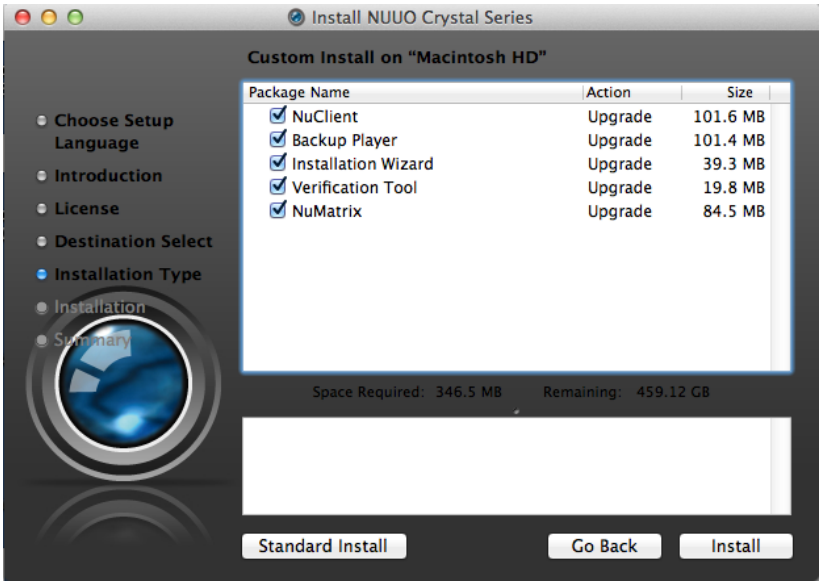
- **Install:** Install everything in this package.



- **Customize:** Install a custom selection of applications.

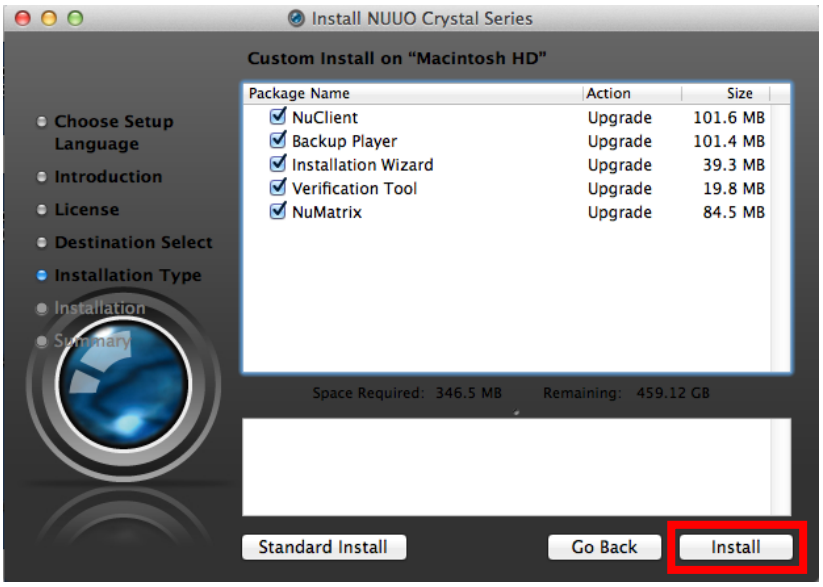


5. Select the applications you want to install

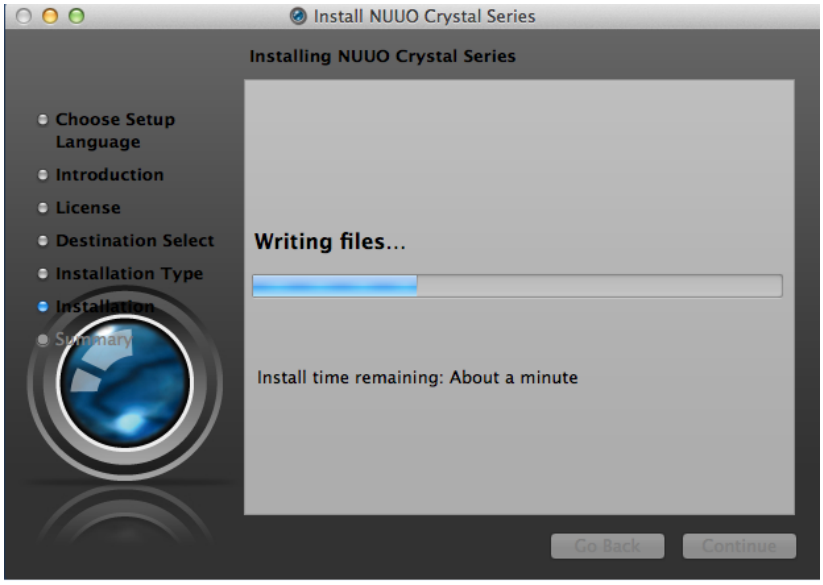


	The install destination only supports the system hard drive at this version.

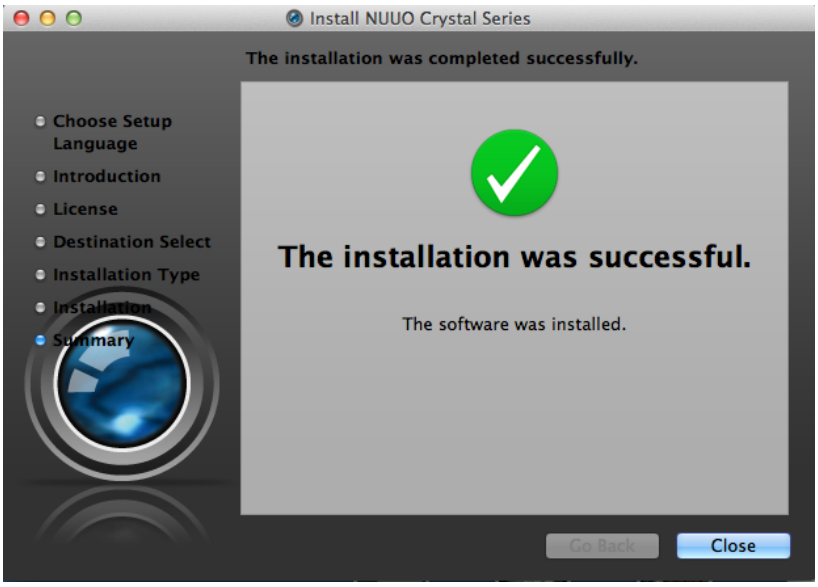
6. Click on the **Install** button to start the installation.



7. The system is being installed.



8. Choose **Close** to finish installation.



4.1.2.2 Launch NuClient in MAC OSX

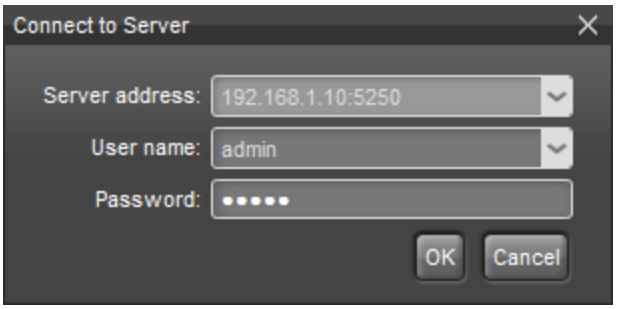
After the O.S. restarts, the installation is done. As soon as the system is successfully installed, a shortcut to launch the software becomes available in your **Applications**.

5. Log in NuClient Application

To log in to the system:

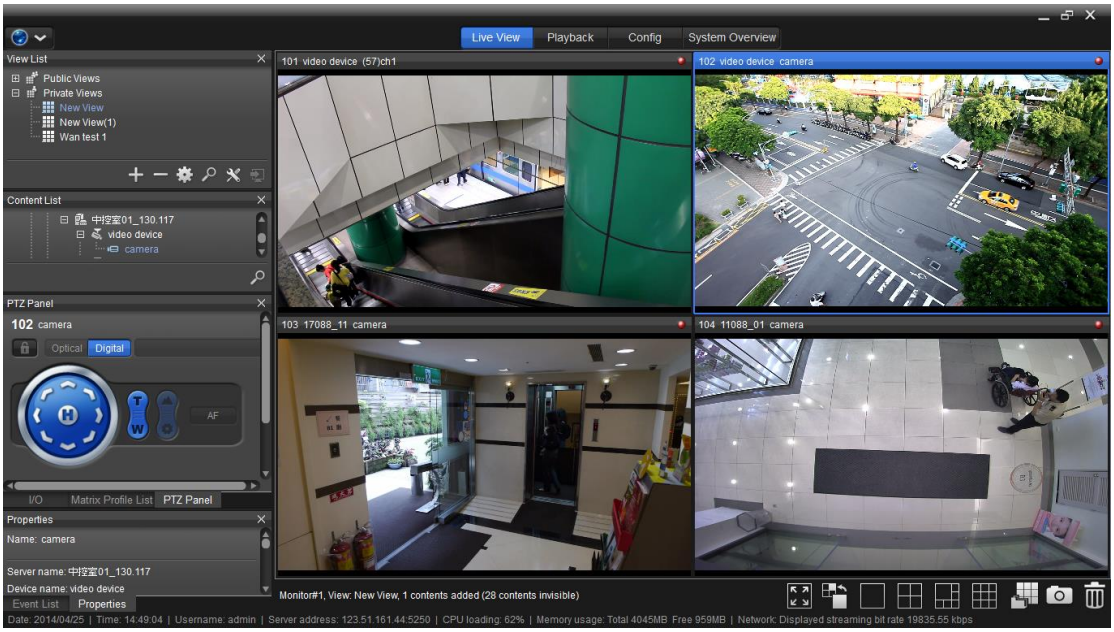
1. Launch the **NuClient** as described in Launch NuClient in Window OS or Launch NuClient in Mac OS .

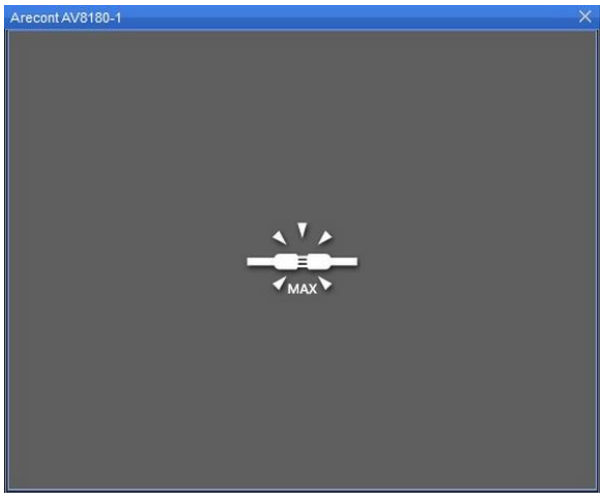
   NuClient launches and a login dialog opens.



2. Enter the server address you are going to connect to, the Username, and the password. Then click the **OK** button.

   Once you're logged in, the main interface of the **NuClient** shows.

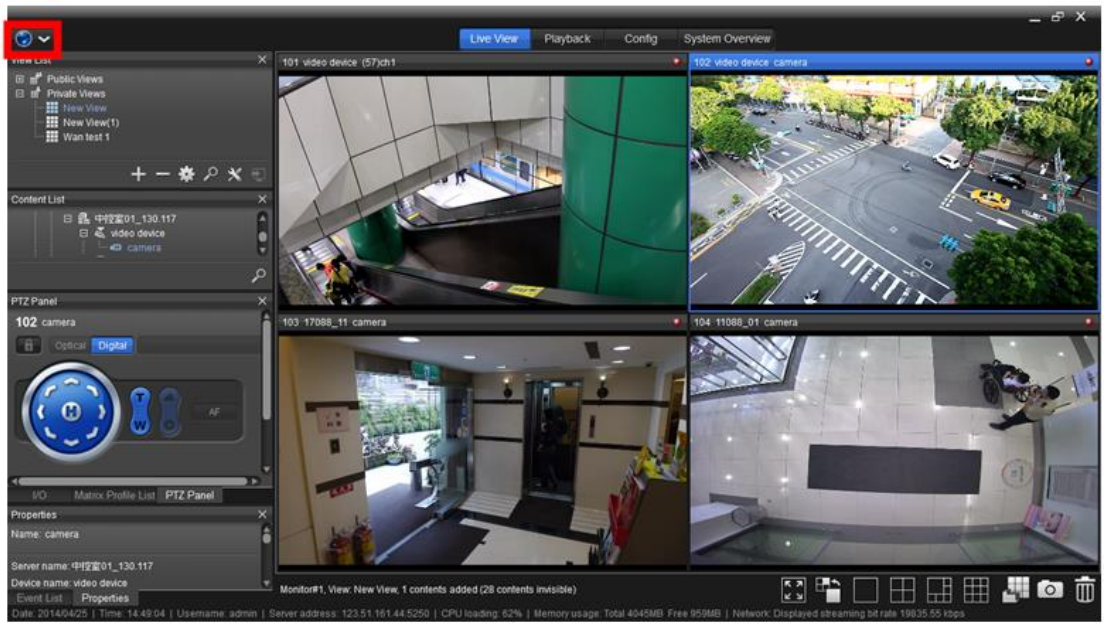


	If too many clients are trying to connecting to a remote server, then an error message will pop up saying the number of maximum connections has been reached. 
	NuClient can only login Management Server, cannot login Recording Server(s), Metadata Server(s).

6. Log out NuClient Application

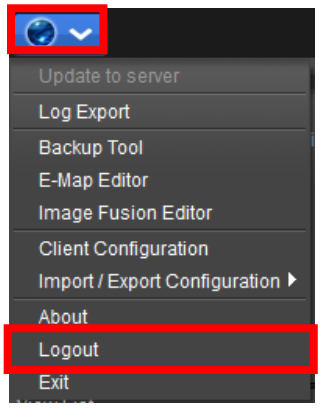
To log out from the system:

1. Access **NuClient**.



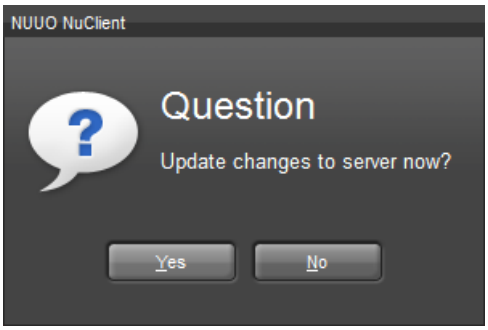
2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.

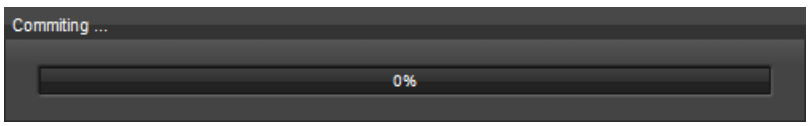


3. Click **Logout**.

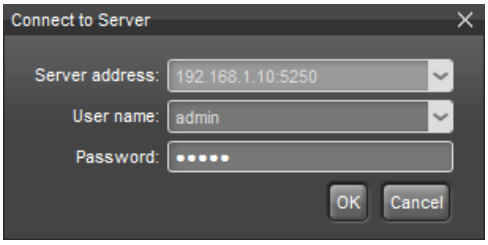
   If you have made any change to the configuration, a dialogs will show and request for your confirmation whether to write the change(s) to the configuration when you log out. To write the change(s) to the server, click the **Yes** button in the dialog.



   A progress bar will appear to show the writing status.



   Once the update is through, the login dialog will re-appear and you are logged out from the system.

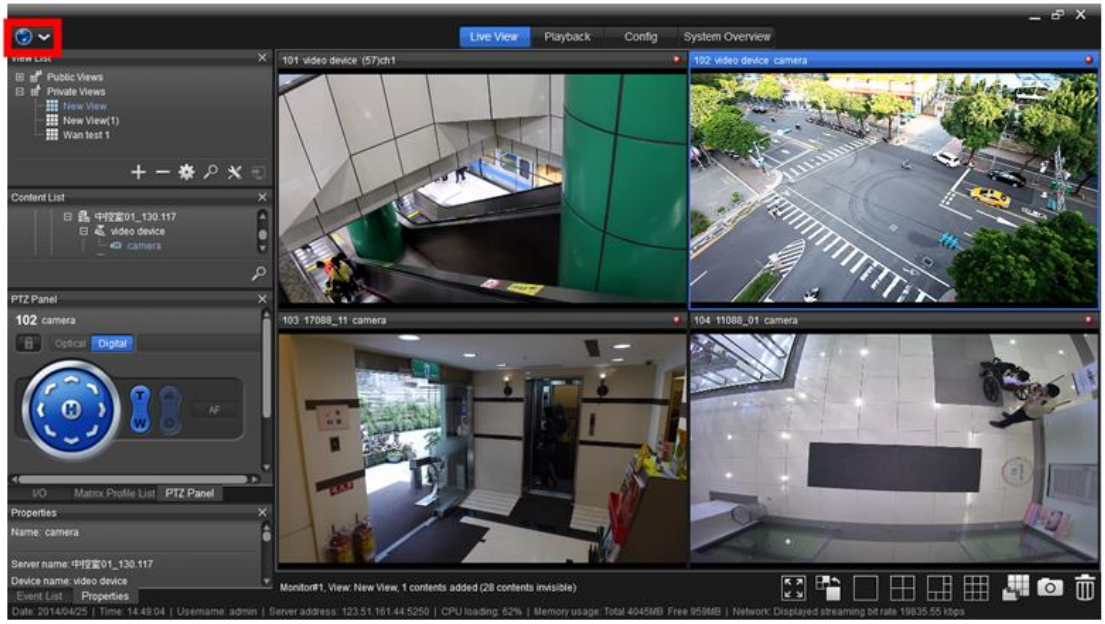


	Both your primary monitor and secondary monitors will be closed when you log out.

7. Exit NuClient Application

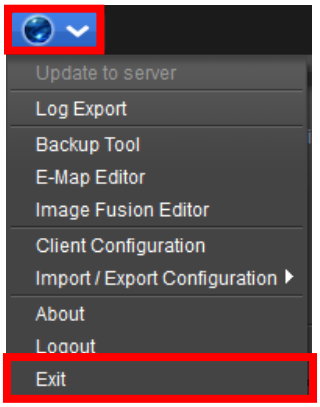
The NuClient still runs and stays in main memory after you log out from it. To close the software:

1. Access **NuClient**.



2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .

   The menu opens.



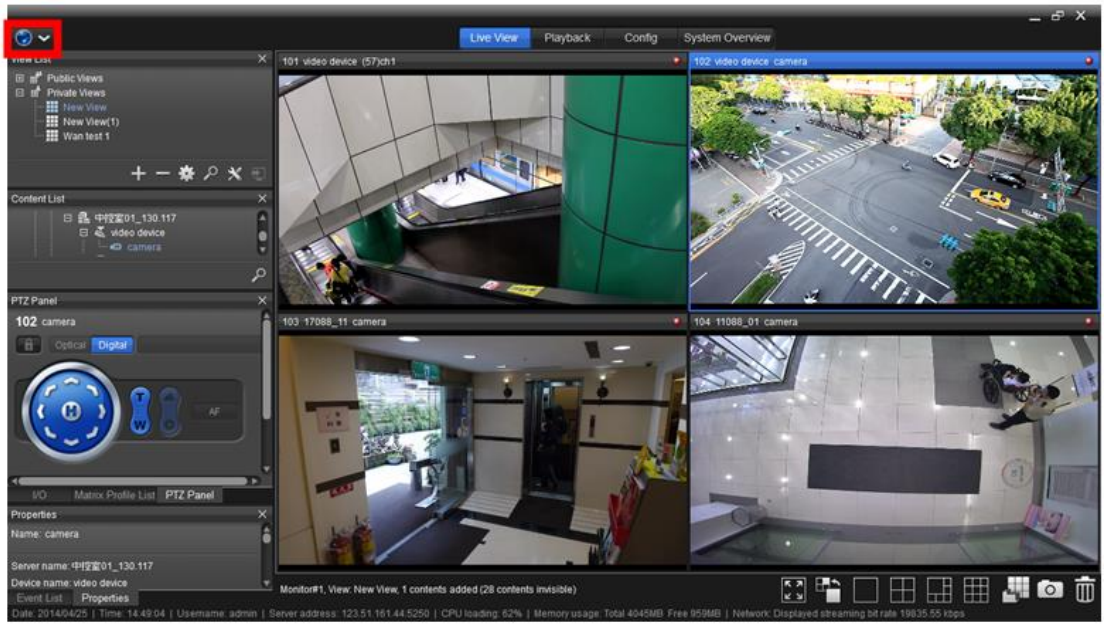
3. Click **Exit**.

The **NuClient** is quit.

8. Version Information

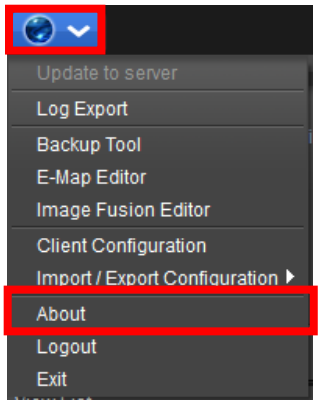
To see the software version of **NuClient**:

1. Access **NuClient**.



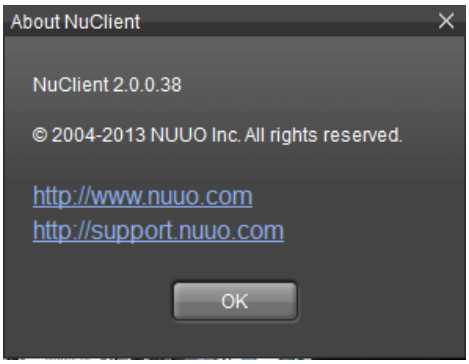
2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .

The menu opens.



3. Click **About**.

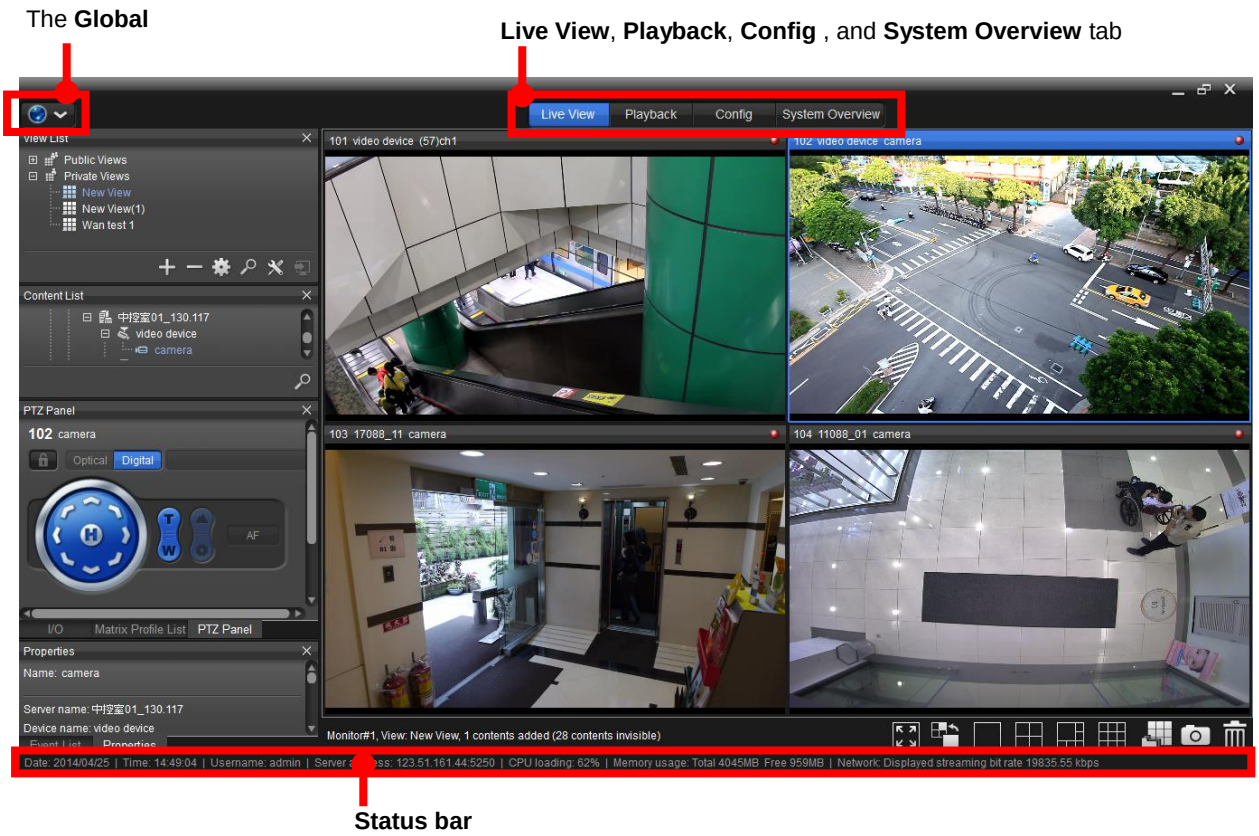
An **About NuClient** window then opens and shows the software's version, copyright information and the links to NUUO's homepage and its technical support site.



	Visit NUUO's technical support site at http://www.nuuo.com/eHelpdesk.php. You may find all sorts of technical information including FAQs, product specifications, and technical contact information.

9. Interface Overview

Understanding the **NuClient**'s user interface helps you navigate the software without any problem. Once you are familiar with the **NuClient**'s UI, you can jump seamlessly within the software.



9.1 Menu– The Global

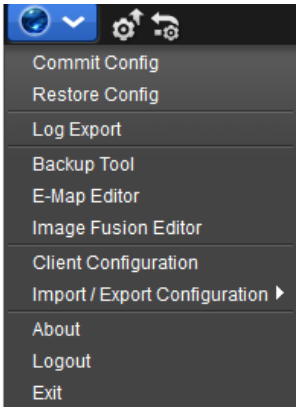
To access the **NuClient**'s menu:

1. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.

   On Config tab, the menu will have two additional icons and choices: Commit

Config and Restore Config.



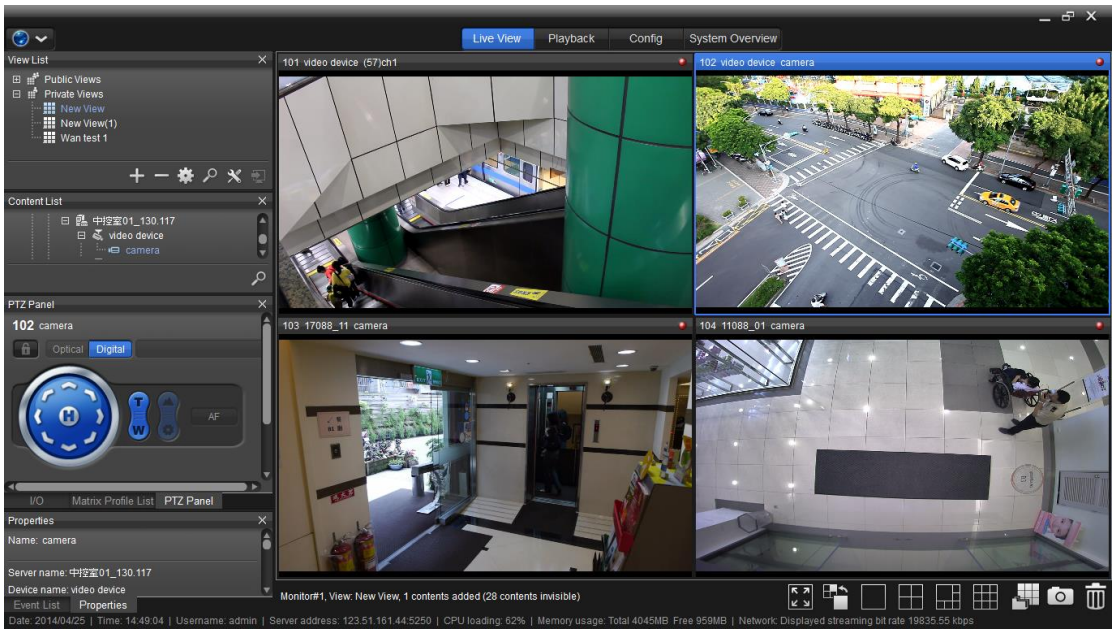
The featured commands are:

Command	Description
Commit Config	Applies the change(s). ▸ This command is efficacious as the **commit config** on the **Config tab, Top Toolbar**. ▸ See also Screen Terminology.
Restore Config	Refresh the change(s). ▸ Request Server provides the configuration which saved in Management Server. ▸ This command is efficacious as the **restore config** on the **Config tab, Top Toolbar**. ▸ See also Screen Terminology.
Log Export	Opens a **Log Viewer** tool to export the log of a desired period of time.
Backup Tool	Launches the **Backup Tool** to save the videos recorded in a desired period of time to a desired local storage.
E-Map Editor	Opens the **E-Map Editor** that inserts multiple maps that mark the locations of cameras and I/O. ▸ The "E-map" is a graphical way to present cameras and I/O devices to give the administrator an idea of where a camera is located, and the relationship among those devices. Cameras and I/O are overlaid on a street map, a floor plan, or any other custom image files.
Image Fusion Editor	Open the **Image Fusion Editor** to create a panoramic view by stitching multiple camera images together.
Client Configuration	Access the preference configuration for the software.
Export Config	Save the **NuClient** configuration to a file.
Import Config	Load a **NuClient** configuration file.
About	Views the developer and version of the software, **NuClient**.
Logout	Signs out from the current account. (**NuClient** will still be running.)
Exit	Quits the software, **NuClient**.

9.2 Live View

When the system starts and users log in, it is the **Live View** that opens on screen. If it isn't the **Live View** screen that shows at the moment, click the **Live View** tab from the **NuClient**'s **Top Toolbar** to open the **Live View** screen.

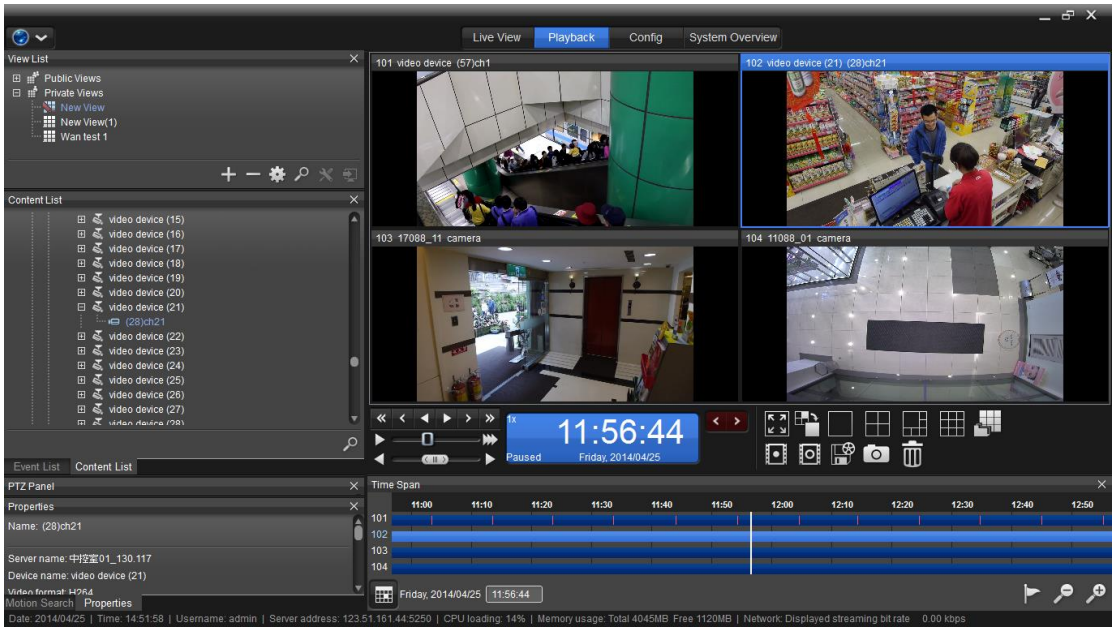
Exactly as its name communicates, the **Live View** is the screen where the instant videos are displayed. Most of the **Live View** screen is occupied by a predominant video area. See Live View to know more about the **Live View** screen.



9.3 Playback

To open the **NuClient**'s **Playback** screen, click the **Playback** tab from the **Top Toolbar**.

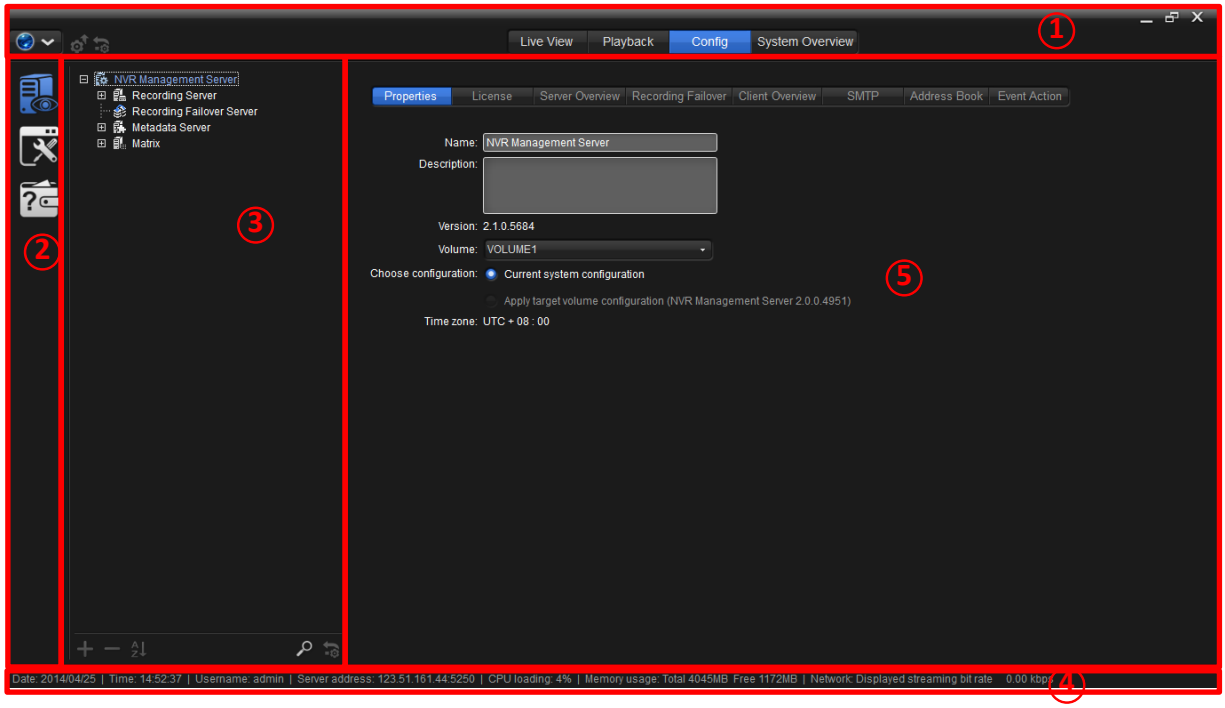
The **Playback** is the screen to play the recorded videos. Same as the **Live View** screen, the **Playback** screen is occupied by a predominant video area as well. See Playback to know more about the **Playback** screen.

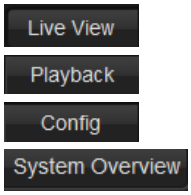


9.4 Config

From the **Top Toolbar** of the **NuClient**, click the **Config** tab to open the **NuClient**'s "configuration" feature which includes "system configuration", "physical configuration" and the help file of the **NuClient**.

See Settings for the "system configuration" and "physical configuration" featured by the **NuClient**.



<table>
<tr><th>Number</th><th>Title</th><th>Description</th></tr>
<tr><td>1</td><td>Top Toolbar</td><td>The Top Toolbar features the following onscreen facilities:
<table>
<tr><th>Facility</th><th>Title</th><th>Description</th></tr>
<tr><td> </td><td>the “global”</td><td>Opens the menu of the NuClient.
▸ See NuClient Menu for more details.</td></tr>
<tr><td> </td><td>apply button</td><td>Applies the change(s).</td></tr>
<tr><td> </td><td>restore button</td><td>Refresh the change(s).</td></tr>
<tr><td> 
</td><td>the tabs</td><td>Switch the NuClient between the Live View, Playback, Config, and System overview features.</td></tr>
</table></td></tr>
<tr><td>2</td><td>Config Catalog</td><td>Switches the NuClient between System Config, Physical Config, and Help.</td></tr>
<tr><td>3</td><td>Tree Console</td><td>▸ Provides the tree menu.
▸ Features the following onscreen facilities:
<table>
<tr><th>Icon</th><th>Title</th><th>Description</th></tr>
<tr><td> </td><td>add sign</td><td>Adds a user group/device.</td></tr>
<tr><td></td><td>delete sign</td><td>Deletes the selected user group/device.</td></tr>
<tr><td> </td><td>ascending button</td><td>Sorts all the user group(s)/device in an ascending order.</td></tr>
<tr><td> </td><td>search button</td><td>Searches for an user group/ a device.</td></tr>
<tr><td> </td><td>Restore system/ physical button</td><td>Restore system/physical setting.</td></tr>
</table></td></tr>
<tr><td>4</td><td>Status Bar</td><td>Deliver system date, system time, user ID, server address, CPU loading, memory usage, and download/upload speed.</td></tr>
<tr><td>5</td><td>Configuration Pane</td><td>Opens the settings featured by a subject of the menu tree when the subject is clicked.</td></tr>
</table>

9.4.1 Graphic Icon on Tree list

The following icon will display on tree from **Physical** configuration.

Graphic icon	Description
	▸ Management Server
	▸ Recording Server

	▸ Video Device
	▸ Camera
	▸ Camera DI/DO
	▸ IO device
	▸ Metadata Server
	▸ Metadata Source
	▸ Metadata channel
	▸ Matrix

The following icon will display on tree from **System** configuration page.

Icon	Description
	▸ User group
	▸ User
	▸ Role
	▸ Schedule
	▸ Layout

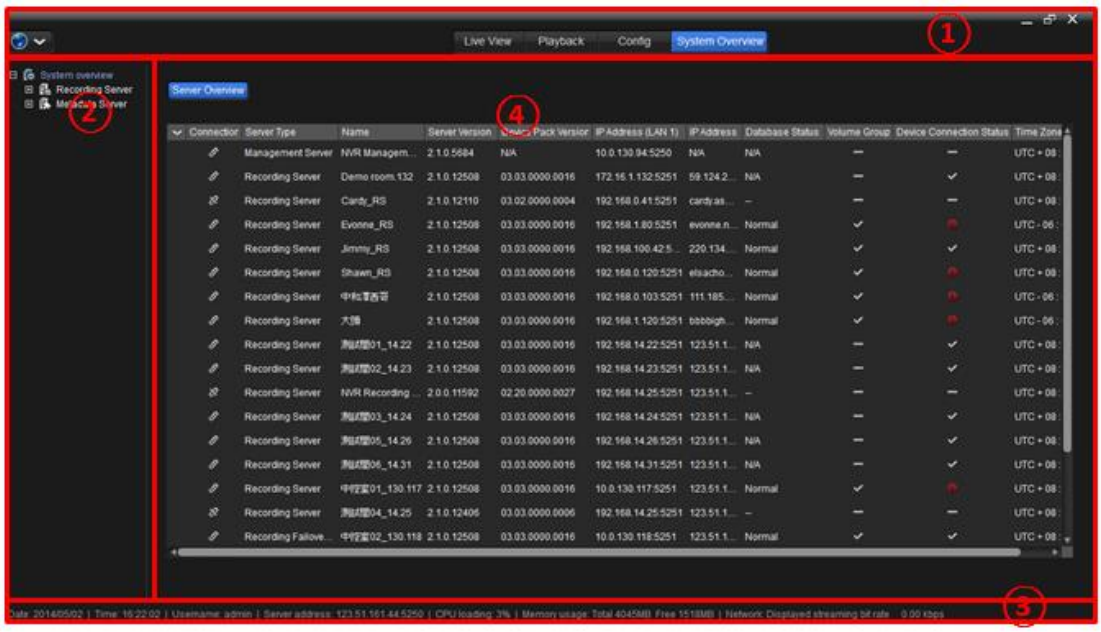
Special notification will overlay on icon from tree list include:

Graphic icon	Description
	▸ Configuration is modified but haven't commit to Management Server. ▸ Click the **apply button** on the **Top Toolbar** to apply the change(s).
	The device is disabled.
	The device is disconnect
	Can't get device information.

9.5 System Overview

From the **Top Toolbar** of the **NuClient**, click the **System Overview** tab to open the system overview feature which includes "real-time system information including all

servers, cameras, 3rd party devices, and IO devices.



Number	Title	Description
1	**Top Toolbar**	The **Top Toolbar** features the following onscreen facilities: **Facility** / **Title** / **Description** the "global" — Opens the menu of the **NuClient**. ▸ See NuClient Menu for more details. apply button — Applies the change(s). restore button — Refresh the change(s). Live View / Playback / Config / System Overview — the tabs — Switch the **NuClient** between the **Live View**, **Playback**, **Config,** and **System Overview** features.
2	**Tree Console**	Provides the tree menu. ▸ There are two layers. The first layer indicates system overview for all servers in the system. The second layer indicates the status of all devices which are connected to Recording Servers and Metadata Servers in the system.
3	**Status Bar**	Deliver system date, system time, user ID, server address, CPU loading, memory usage, and download/upload speed.
4	**Status Pane**	Display the status of servers and devices.

9.5.1 Graphic Icon on Tree list

The following icon will display on tree.

Graphic icon	Description
	▸ System Overview ▸ The **Status Pane** will display the status of all servers belongs the system
	▸ Recording Server ▸ The **Status Pane** will display the status of all video devices and IO devices belongs to the Recording Server
	▸ Metadata Server ▸ The **Status Pane** will display the status of all Metadata devices belongs to this Metadata Server

9.6 Status Bar

In the status bar, you may see real-time system information including the current date/time, Username, the address of the server you connect to, CPU usage, memory usage, network download/upload bit-rates, and custom text.

10. Configuration

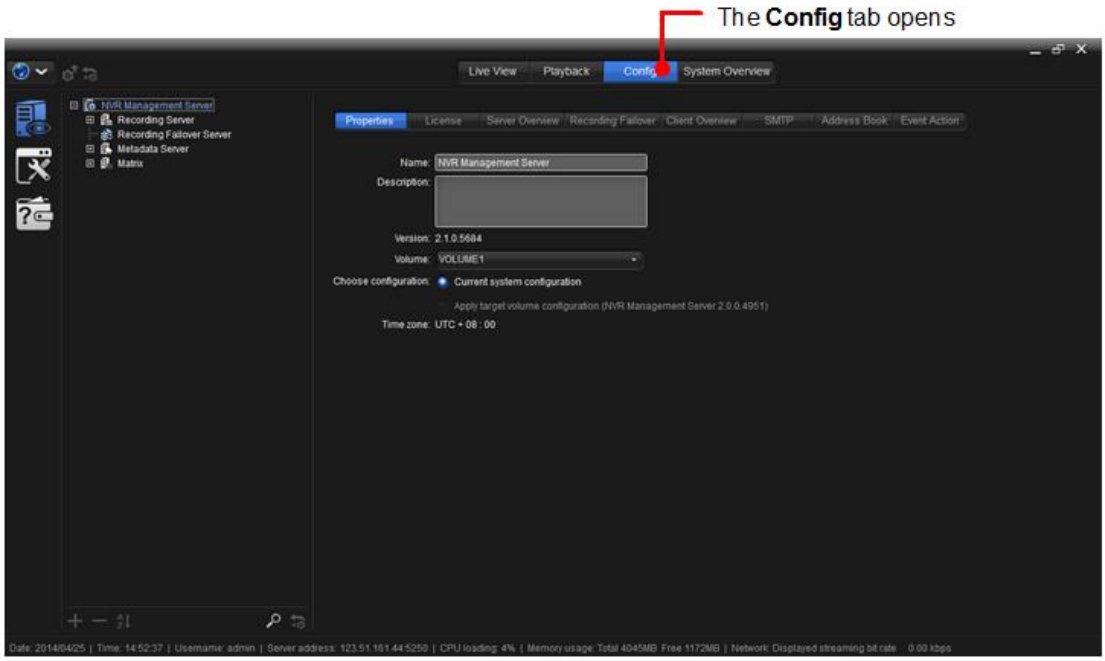
The **Config** tab features two types of configuration. One is the “system configuration”; the other is the “physical configuration”. The “system configuration” means to configure **Management Server** basic profile setting such as user group, role, schedule and layout while the “physical configuration” means to configure all the physical devices within the network such as Recording Server, Metadata Server, Matrix, video device, camera and I/O devices. Generally the “system configuration” should be done prior to the “physical configuration”.

To access the **NuClient** settings:

1. Launch the **NuClient** as described in Launch NuClient in Window OS or Launch NuClient in Mac OS.
   The **NuClient** opens onscreen and shows the **Live View** tabbed page by default.

2. From the **Top Toolbar**, click the **Config** tab.

   The **Config** tab opens.



10.1 Physical Configuration

The **Management Server** runs the administrative software to control all the networked devices including the **Recording Server**, **Metadata Server** and **Matrix**. Hence, it relies on the **Management Server** to configure all the networked devices.

To access the **Physical Config** (“physical configuration”):

1. Open the **NuClient** settings as described in Settings.

   The **NuClient** settings open.

2. Click the **Physical Config** icon from the **Config Catalog**.

   The **physical configuration** then opens onscreen and shows the **Management Server** settings by showing the **Properties** tabbed page in the **Configuration Pane**.

   The **physical configuration** features the following settings:

Setting	Description
Recording Server	Configures the **Recording Server** to control one or more "video device(s)" that further controls one or more camera(s) or camera DI/DO. ▸ See Configure Recording Server for the settings.
Recording Failover Server	Configures the **Recording Failover Server** to fail over Recording Server when Recording Server is disconnected with Management Server. ▸ See Configure Recording Failover Server for the settings.
Metadata Server	1. Configures the **Metadata Server** to host the third-party device servers and archive their data. 2. Configures the **Metadata Server** to stream and archive the data from the third-party device servers (such as POS server, Access Control server, and LPR server) so the **NuClient** is able to combine the data with video images for more sophisticated application such as theft investigation. ▸ See Configure Metadata Server for the settings.
Matrix	Enables an unlimited number of video walls and video displays. ▸ See Configure Matrix for the settings.

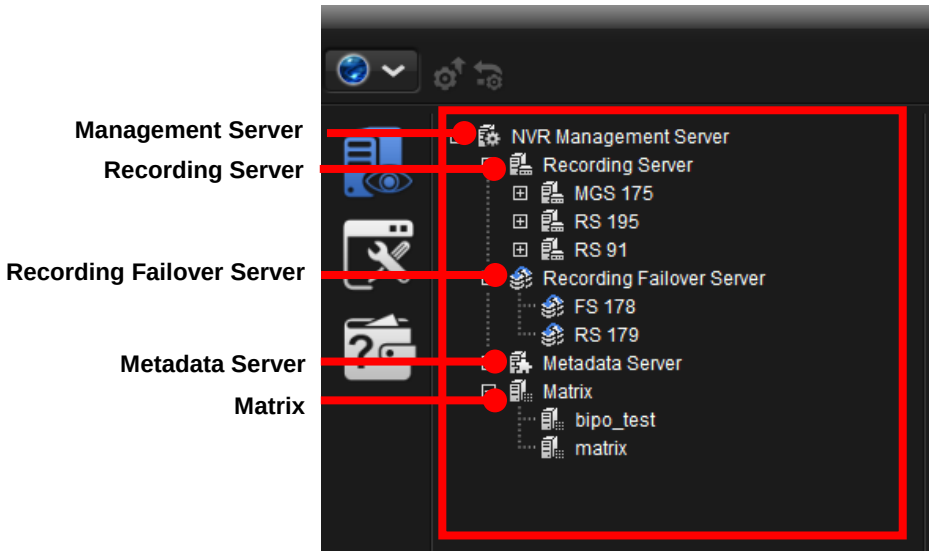
Please note that only when have an "Ultimate level" license will you be able to see the Matrix interface on NuClient**.**

10.1.1. Configure Management Server

To configure the **Management Server**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **Physical Config** icon from the **Config Catalog**.

2. The **Tree Console** then shows three setting groups: **Recording Server**, **Metadata Server** and **Matrix**.



3. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane** while the other six tabbed pages are hidden.

4. Access one of these tabbed pages to configure the **Management Server**.

   A function overview of these tabbed pages:

Tab	Description
Properties	Enters the information about the **Management Server** including the name, description, RAID (disk) volume and so on. ▸ See Properties for the settings.
License	Activates/transfers the licenses (to use NUUO software) for the networked physical devices. ▸ See License for the settings.
Server Overview	Delivers a general view of all the servers under the control of the **Management Server**, including the **Recording Server(s)**, **Metadata Server(s)** and **Matrix(s)**. ▸ See Server Overview for the settings.
Recording Failover	Group **Recording Servers** and **Recording Failover Servers** to ensure Recording Failover Server mechanism. See Recording Failover Server for the settings.
Client Overview	Delivers a general view of the clients connected to the **Management Server**. ▸ See Client Overview for the settings.
SMTP	Sets up the "Simple Mail Transfer Protocol" for the **Management Server** so it can send out emails. ▸ See SMTP for the settings.
Address Book	Sets up the emails to receive the **Management Server**'s notifications for the configured camera events, input events and system events. ▸ See Address Book for the settings.

Event Action	Enables/disables the event(s) that will launch action(s) from the **Management Server**. ▸ See Event Action for the settings.

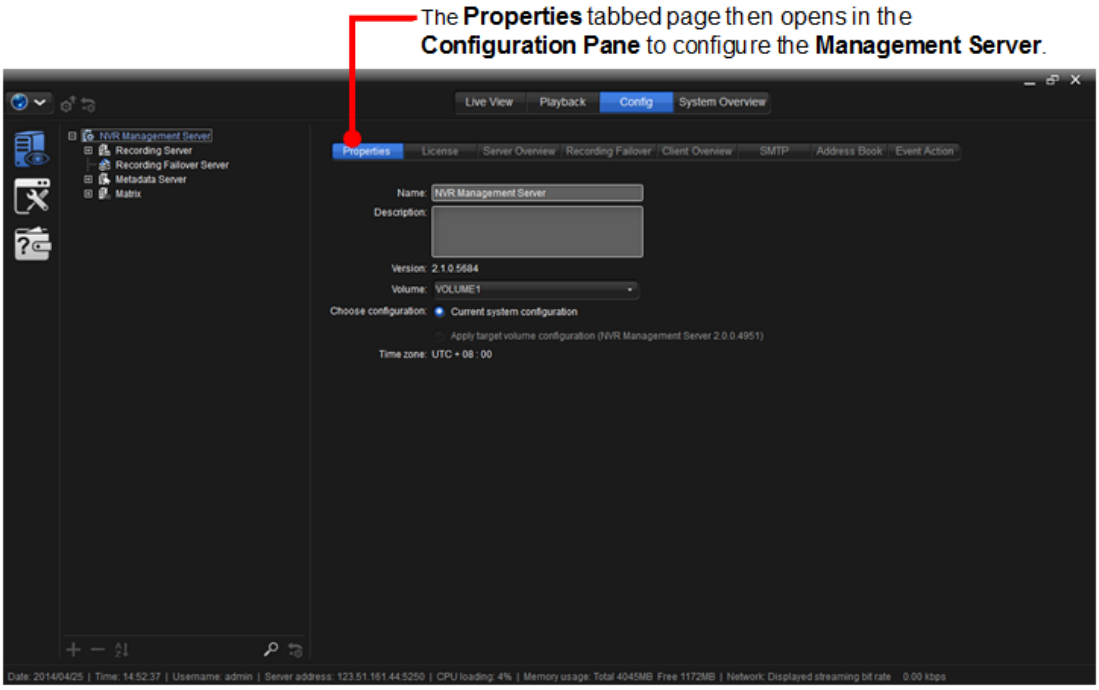
10.1.1.1. Properties

It relies on the **Properties** tabbed page to enter the information about the **Management Server** including the name, description, RAID (disk) volume and so on.

To access the **Properties** tabbed page that configures the **Management Server**:

1. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane**.



The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Name	Names the **Management Server**.	"Management Server"
Description	Provides a brief description for this **Management Server** for the easier identification of it.	--
Volume	Assigns a "volume" to the **Management Server** to store configuration.	Volume A

	▸ For volume create and setting, go to web setting first. ▸ If one volume has been assigned to Recording Server or Metadata Server, it can still be assigned as Management Server configuration volume.	
Choose configuration	If the volume chosen has existing configuration, there are two options. 1. Current system configuration 2. Apply target volume configuration	

10.1.1.2. License

It relies on the **License** tabbed page to activates/transfer the licenses for the physical devices on the **Management Server**'s network.

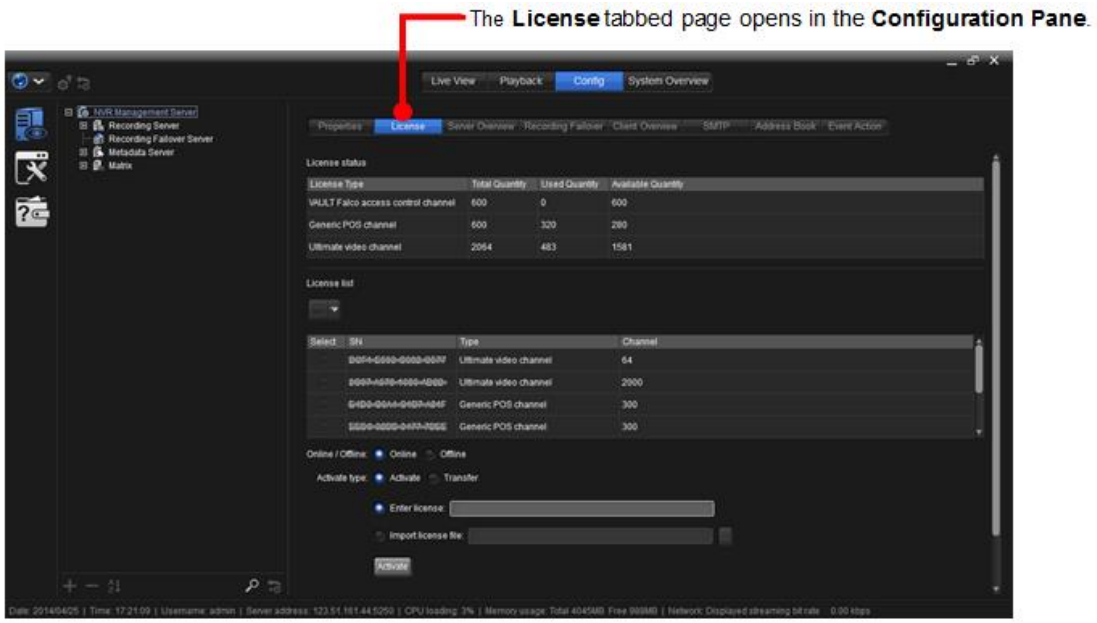
To access the **License** tabbed page that configures the **Management Server**:

1. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane** by default.

2. Click the **License** tab.

   The **License** tabbed page then opens at the **Configuration Pane** showing an overview of the networked devices' current licensing status for NUUO software.



Take a look at the NUUO software license overview table:

License Type	Total Quantity	Activated Quantity	Unactivated Quantity
Falco access control channel	6	0	6
Generic POS channel	11	1	10
Ultimate video channel	8	7	1

Item	Description
License Type	Delivers what the user is permitted to use the software for. ▸ Three license types are available: **Video License** With **Enterprise** and **Ultimate** license, the user is able to connect cameras to this system. **Metadata License** With different types of metadata licenses, the user is able to access different type and brand of 3rd party devices, including POS, Access Control system...etc.
Total Quantity	Delivers the total quantity of the license(s) within the **Management Server**.
Available Quantity	Delivers the quantity of the available license(s) from the **Management Server** assign to **Recording Server** and **Metadata Server**.
Used Quantity	Delivers the quantity of the used license(s) from the **Management Server** assign to **Recording Server** and **Metadata Server**.

The featured settings on the **License** tabbed page are:

Item / Setting / Option	Description	Default
Select	Selects a license.	--
SN	Delivers a license's serial number.	--
Type	Delivers the license type.	--
Channel	Delivers the total license quantity of SN.	--
Online/Offline	Sets how to active/transfer license, online or offline. ▸ Select **Online** to activate/transfer the license online, which requires the Management Server to connect to the Internet. ▸ Select **Offline** to activate/transfer the license if the Management Server is not connected to the Internet.	Online
Activate type	Sets what to do with the license, to activate or to transfer it. ▸ Select **Activate** to activate the license ▸ Select **Transfer** to transfer the license to other servers.	Activate
Input license	The license key should be manually entered here. ▸ This option is only available when you are "activating" the license "online" (, which means **Online** is selected for **Online / Offline** setting and **Activate** is selected for **Activate type** setting).	--
Import license file	Click the ellipsis (…) button to browse for the license file. ▸ This option is only available when you are "activating" the license "online" (, which means **Online** is selected for **Online / Offline** setting and **Activate** is selected for **Activate type** setting).	--
Step 1: Export offine pack folder	Exports the server information file to the local disk. ▸ Click the ellipsis (…) button to browse where to export the server	--

	information file. ▸ Click the **Export** button to export the server information file. ▸ This option is only available when you are “activating” the license “offline” (, which means **Offline** is selected for **Online / Offline** setting and **Activate** is selected for **Activate type** setting).	
Step 2: Copy exported offline.req to a PC …	This is a line of guide rather than a setting. Please copy the offline.req that is exported in **Step 1** to a computer that is connected to the Internet, and run the **License Management Tool** to activate the license and get the offline license file. ▸ This line of guide is only available when you are “activating” the license “offline” (, which means **Offline** is selected for **Online / Offline** setting and **Activate** is selected for **Activate type** setting).	--
Step 3: Import license file	Imports the offline license file that is obtained in **Step 2**. ▸ This option is only available when you are “activating” the license “offline” (, which means **Offline** is selected for **Online / Offline** setting and **Activate** is selected for **Activate type** setting). ▸ Click the **Activate** button to run the activation.	--
Activate button	Runs the activation.	--
Transfer button	Runs the transfer.	--

	There are two level of video channel license types—Ultimate and Enterprise. On each system, only one level of licenses can be chosen. Therefore, if one user wants to activate Ultimate level license in a Management Server, please **activate upgrade license** for all Enterprise licenses, or **transfer all Enterprise license** before activating Ultimate licenses.
	The maximum number of camera licenses in one system(**Management Server**) is unlimited, but the maximum number of camera enabled per **Recording Server** is 64CH. If there has been 63 ch camera enabled, and then add 4 ch video servers, only one camera will be enabled and the remaining 3ch will be disabled.

10.1.1.2.1. Online License Activate

If the Management Server is “online” (, which means it is connected to the Internet), activate the license online by the following guide.

	If Management Server is under LAN, please operate “Offline activation” process even NuClient is connected to the Internet.

1. Open the **License** tabbed page for the **Management Server** as described in License.
2. Select **Online** for the **Online/Offline** setting.
3. Select **Activate** for the **Activate type** setting.
4. Select **Input license** and enter the license key in the field.

OR

Select **Import license** file and click the ellipsis (…) button to browse for the license file to activate multiple licenses at once. (.txt file)

5. Click the **Activate** button.
   The license will be activated on the server computer if the license key is effective.

10.1.1.2.2. Offline License Activate

If the Management Server is “offline” (, which means it isn’t connected to the Internet), activate the license offline by the following guide:

1. Open the **License** tabbed page for the **Management Server** as described as described in License.
   Select **Offline** for the **Online/Offline** setting.
2. Select **Activate** for the **Activate type** setting.
3. Click the ellipsis (…) button besides the **Step 1: Export offline pack folder** field to browse for the directory to export the server information file to.
4. Click the **Export** button.
   The server information file is exported the directory assigned.
5. Select **Import license** file and click the ellipsis (…) button to browse for the license file to import.
6. Copy the offline.req that is exported in **step 6** to a computer that is connected to the Internet.
7. Run the **OfflineTool.exe** on that computer.
   The **Offline Tool** launches.

8. Enter the serial number or import the serial number file.
9. Click the **Activate** button.
   The license is activated and an offline license file is generated on that computer.

10. Copy the offline license file back to the server computer.
11. On the server computer, re-open the **License** tabbed page for the **Management Server** as described as described in License if it hasn’t been opened.
12. Select **Offline** for the **Online/Offline** setting, and select **Activate** for the **Activate type** setting if they haven’t been selected yet.
13. Click the ellipsis (…) button besides the **Step 3: Import license file** field to browse

for the offline license file on the server computer.

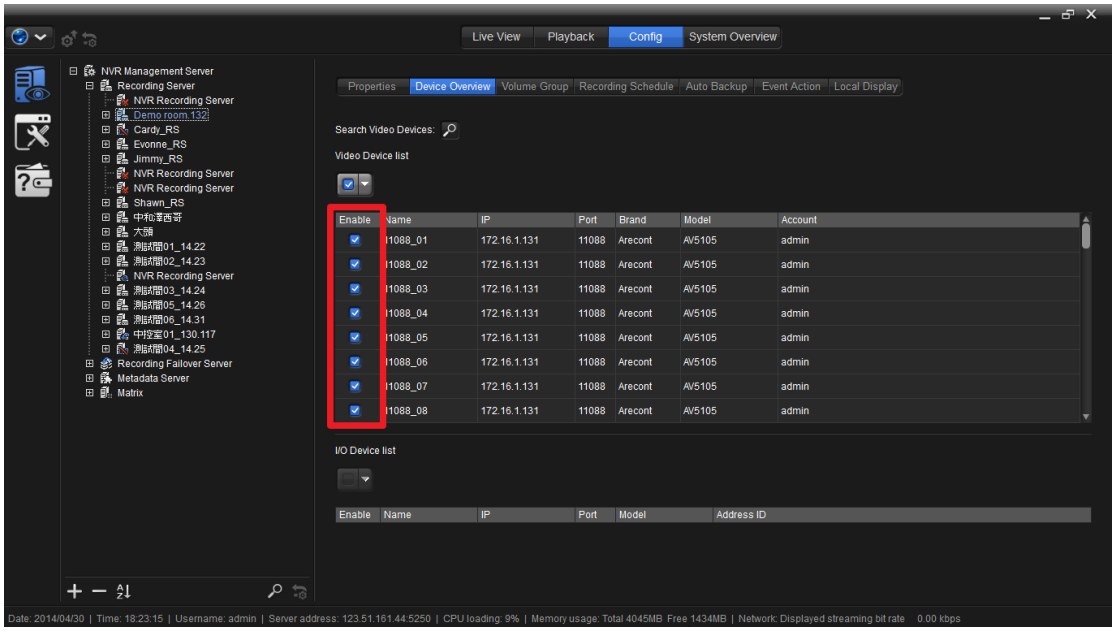
14. Click the **Activate** button.
    The license will be activated on the Management Server.

10.1.1.2.3. Online License Transfer

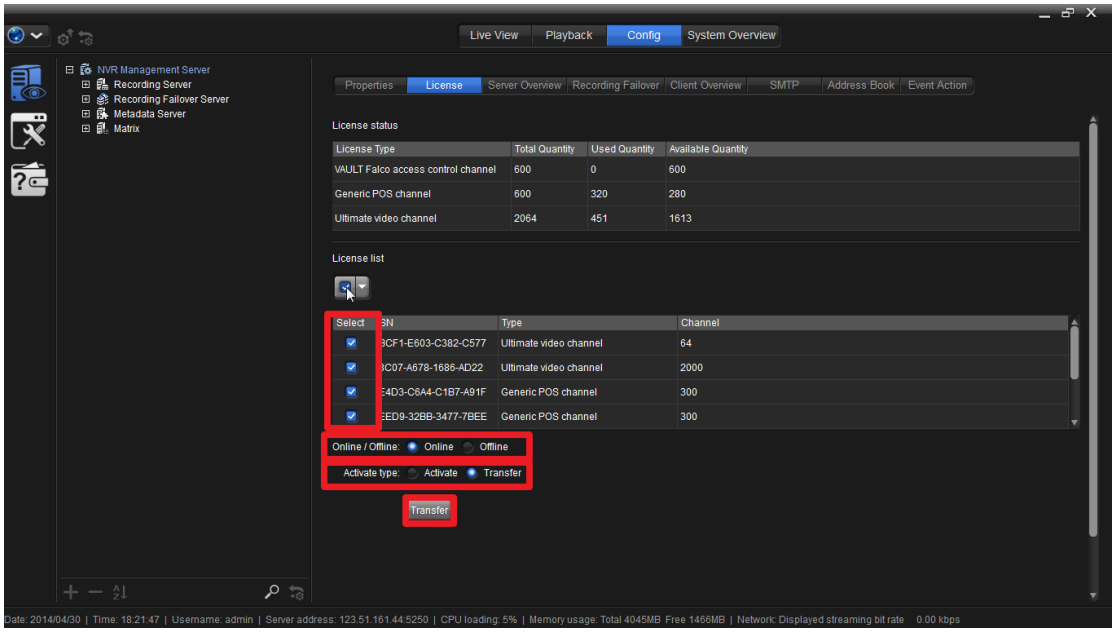
If the Management Server is “online” (, which means it is connected to the Internet), transfer the license by an online manner by the following guide:

Before transferring licenses, please disable devices on device overview page to release license to available license type.

1. Launch Crystal NuClient and login Management Server.
2. Go to Recording Server -> Device Overview page.
3. Disable devices by unchecking the video devices.



4. Open the **License** tabbed page for the **Management Server** as described in License.
5. Select **Online** for the **Online/Offline** setting.
6. Select **Transfer** for the **Activate type** setting.
7. Click the **Transfer** button.
    The license will be released and available for activation.

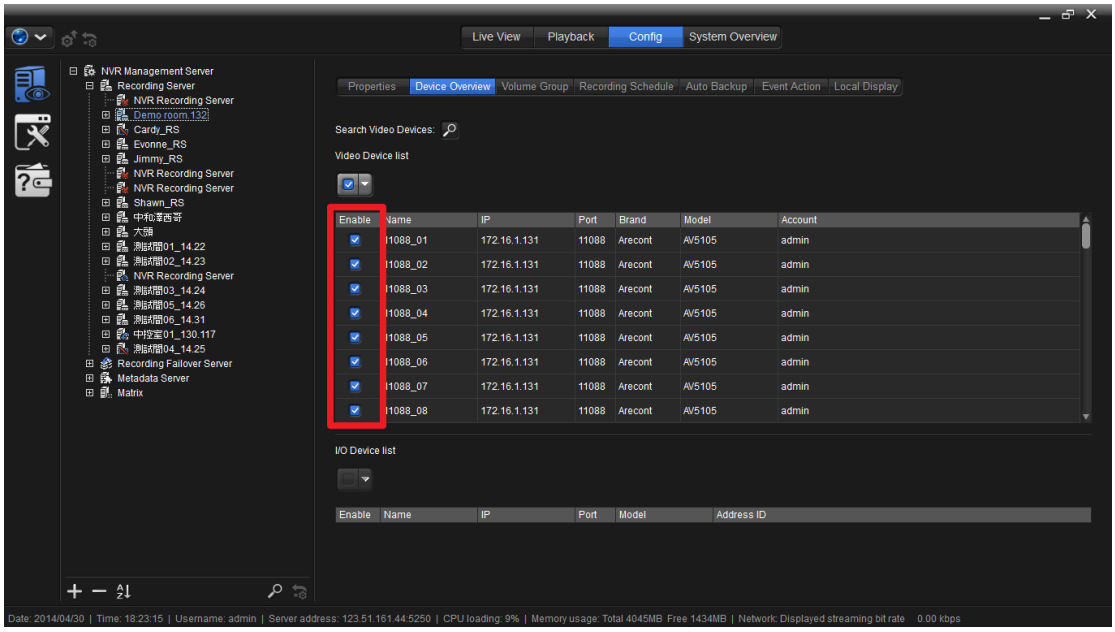


10.1.1.2.4. Offline License Transfer

If the Management Server is “offline” (, which means it isn’t connected to the Internet), transfer the license with an offline manner by the following guide:

Before transferring licenses, please disable devices on device overview page to release license to available license type.

1. Launch Crystal NuClient and login Management Server.
2. Go to Recording Server -> Device Overview page.
3. Disable devices by unchecking the video devices.



4. Open the **License** tabbed page for the **Management Server** as described in License.
5. Select **Offline** for the **Online/Offline** setting.
6. Select **Transfer** for the **Activate type** setting.
7. Click the **Transfer** button.
8. Save the request file that is generated.
9. Copy the request file generated in **step 8** to some other computer that is connected to the internet.
10. Run the **OfflineTool.exe** on that computer.
11. The **Offline Tool** launches.
12. Click the serial number and click the **Transfer** button.

The license will be transferred.

	If user only finish step 1 to 4 (only click “Export” on license manage page, but not take the “OffLineTool.reg” to another computer, then transfer online), this license will still be transferred from the original Crystal, but can’t be used by another Crystal.

10.1.1.3. Server Overview

It relies on the **Server Overview** tabbed page to get a general view of all the **Management Server**’s networked servers, including **Recording Server**, **Metadata**

Server and **Matrix**.

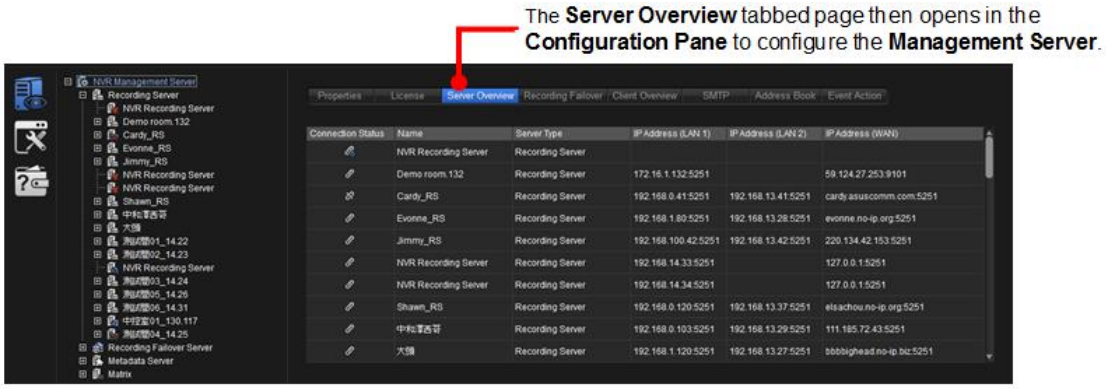
To access the **Server Overview** tabbed page that configures the **Management Server**:

1. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane** by default.

2. Click the **Server Overview** tab.

   The **Server Overview** tabbed page then opens in the **Configuration Pane** showing an overview of all the **Management Server**'s networked servers, including **Recording Server**, **Metadata Server** and **Matrix**.



Take the closer look at the overview table. Each column delivers the following info:

Setting	Description
Failover/Link Status	Delivers the server's failover or connection status: Icon: The server is connected with the **Management Server**. Icon: The server is disconnected from the **Management Server**.
Name	Delivers the name of the server.
Service	Delivers the service that the server provides.
LAN Address 1	Delivers the server's LAN port 1's currently networked IP address. ▸ If the LAN port isn't in use, the networking status isn't available.
LAN Address 2	Delivers the server's LAN port 2's currently networked IP address. ▸ If the LAN port isn't in use, the networking status isn't available.
WAN Address	Delivers the server's WAN address.

	▸ If the WAN isn't in use, the networking status isn't available.

10.1.1.4. Recording Failover Group

It relies on the **Recording Failover** tabbed page to assign **Recording Failover Servers** to stand by and fail over **Recording Servers** in the system.

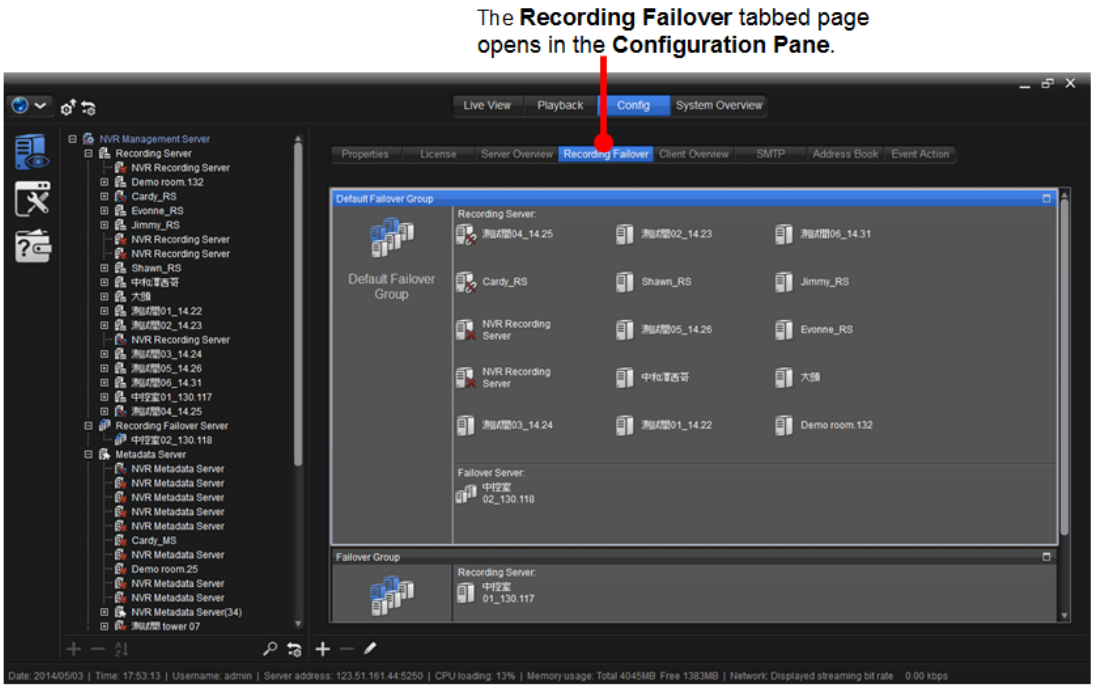
To access the **Recording Failover** tabbed page that configures the **Management Server**:

1. From the **Tree Console**, click the topic **Management Server**.

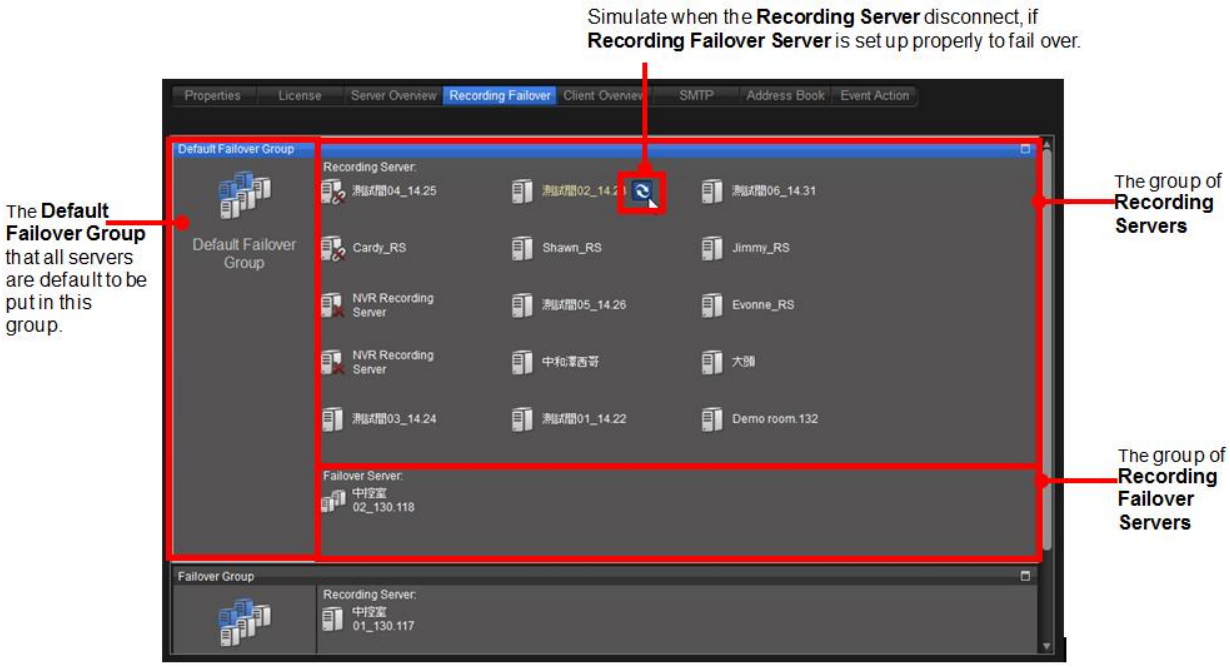
   The **Properties** tabbed page then opens in the **Configuration Pane** by default.

2. Click the **Recording Failover** tab.

   The **Recording Failover** tabbed page then opens at the **Configuration Pane** showing an overview of all the client(s) connected to the **Management Server** at the moment, including **NuClient** and mobile client(s), which streams videos with lower fps.



Take a closer look at the user interface. The **Recording Failover** tabbed page actually shows all the existing **Recording Servers and Recording Failover Servers.**



Take the closer look at the table. Each column delivers the following info:

Icon / Item	Name	Description
	Failover Group	The group for **Recording Servers** and **Recording Failover Servers**. When Recording Server disconnect with Management Server, the Recording Failover Server in the same Failover Group will start fail over the Recording Server. User can assign multiple Recording Server and Recording Failover Servers to one Failover Server group. All Recording Server and Recording Failover Server will be displayed in **Default Failover Group**.
	Recording Server - Normal	The Recording Server operates normally.
	Recording Server - Simulation	The Recording Server is in simulation mode to simulate when it is disconnected with Management Server, if **Recording Failover Server** is set up properly to fail over.
	Recording Server - Disable	The Recording Server is manually disabled.
	Recording Server - Disconnect	The Recording Server is disconnected with Management Server.
	Recording Server - Disconnect but failing over by Failover Server	The Recording Server is disconnected with Management Server but it is failing over by another Recording Failover Server.

	Recording Failover Server- Standby	The Failover Sever is standby to fail over Recording Server.
	Recording Failover Server- fail over	The Failover Sever is fail over Recording Server.
	Not Simulate	Client to simulate when the **Recording Server** disconnect, if **Recording Failover Server** is set up properly to fail over. After clicking this icon, the Recording Server will be disconnected until the icon is clicked again or 20 min time out.
	Simulating	Click to stop simulate the situation of **Recording Server** disconnect.
	Add	Add a Failover Group
	Delete	Delete a Failover Group
	Edit	Edit the name of a Failover Group

After all recording failover configuration, please operate **Simulation** Recording Failover Group to ensure all settings are correct.

10.1.1.5 Client Overview

It relies on the **Client Overview** tabbed page to get a general view of all the clients connected to the **Management Server**.

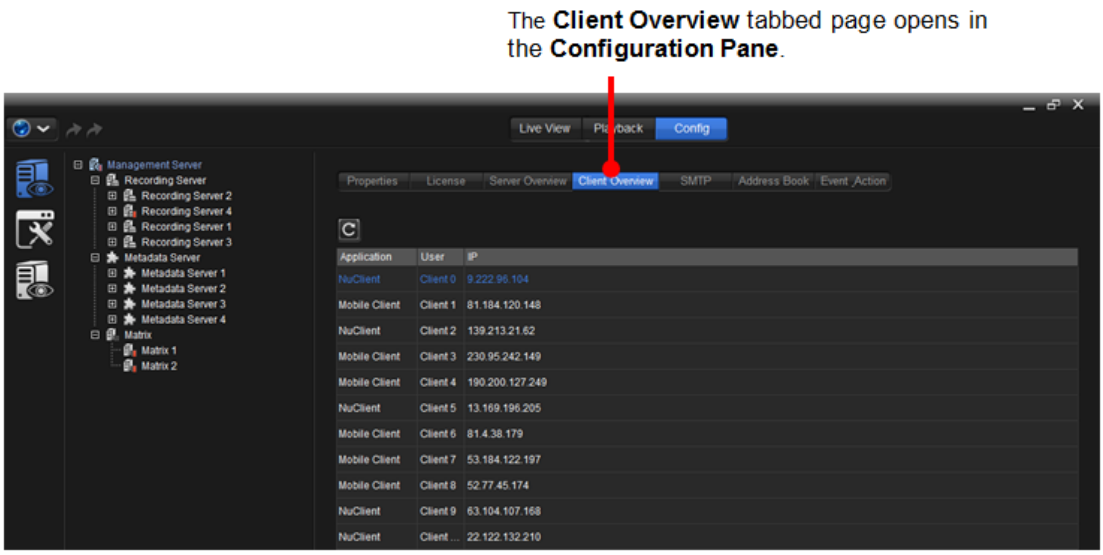
To access the **Client Overview** tabbed page that configures the **Management Server**:

1. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane** by default.

2. Click the **Client Overview** tab.

   The **Client Overview** tabbed page then opens at the **Configuration Pane** showing an overview of all the client(s) connected to the **Management Server** at the moment, including **NuClient** and mobile client(s), which streams videos with lower fps.



Each column delivers the following info:

Icon / Item	Description
	Refreshes the connected client(s).
Application	Delivers the client's application type.
User	Shows the user(s) using the application at the moment.
IP	Delivers the IP address by which the client is connected to the Management Server.

10.1.1.6. SMTP

It relies on the **SMTP** tabbed page to set up the "Simple Mail Transfer Protocol" for the **Management Server** to send out emails.

To access the **SMTP** tabbed page for the **Management Server**:

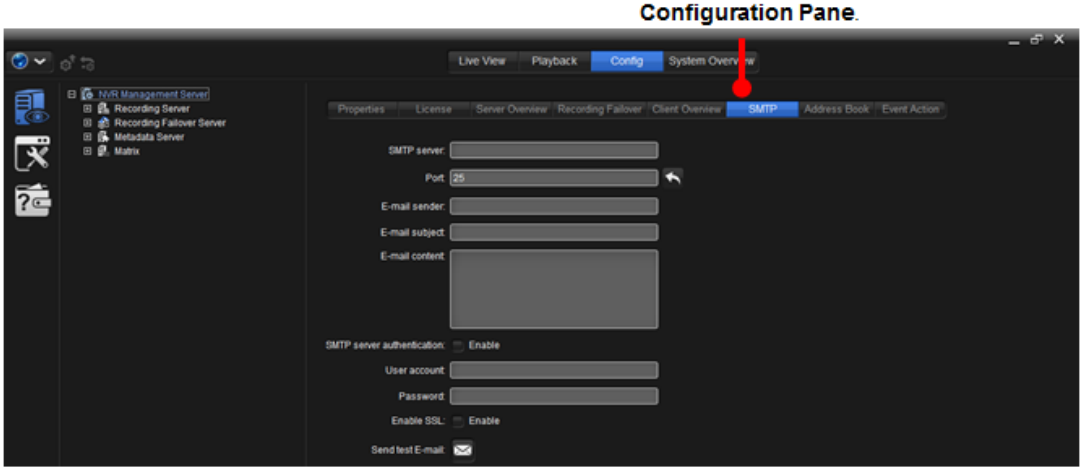
1. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane** by default.

2. Click the **SMTP** tab.

   The **SMTP** tabbed page then opens at the **Configuration Pane**.

The **SMTP** tabbed page opens in the **Configuration Pane**.



The featured settings on the **SMTP** tabbed page are:

Setting	Description	Default
SMTP server	Sets the SMTP server's IP address or server name.	--
Port	Assigns the port number. ▸ Click the icon to recover the default.	25
E-mail sender	Sets the sender's Email address.	--
E-mail subject	Defines a subject for **all** the Emails sent.	--
E-mail content	Enters the Email content.	--
SMTP server authentication	Enables/disables the username/password authentication before an Email is sent.	Deselected (Disabled)
User account	Sets up the username for SMTP authentication.	--
Password	Sets up the password for SMTP authentication.	--
Enable SSL	Enables/disables Secure Sockets Layer.	Deselected (Disabled)
Send test E-mail	Makes the **Management Server** send a test Email to the sender to make sure the function works. ▸ Click the icon to send the test Email.	--

10.1.1.7. Address Book

It relies on the **Address Book** tabbed page to set up the emails to receive the **Management Server**'s notifications for the configured camera events, input events and system events.

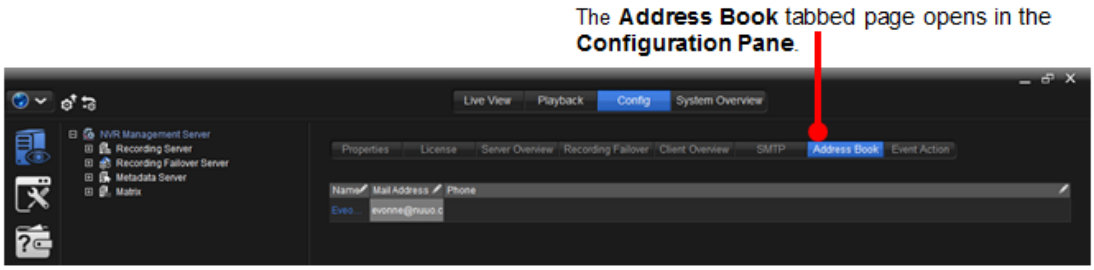
To access the **Address Book** tabbed page for the **Management Server**:

1. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane** by default.

2. Click the **Address Book** tab.

   The **Address Book** tabbed page then opens in the **Configuration Pane** showing an overview of all the emails set up as well as some settings.



Each column of the overview table delivers the following info:

Item	Description
Name	Delivers the name of the contact.
Mail Address	Delivers the email address of the contact
Phone	Delivers the phone number of the contact

The featured settings are:

Icon	Description
+	Adds a new contact.
−	Deletes the selected contact. ▸ Click any of the contact info to select the contact.
✎	Edits the selected contact. ▸ Click any of the contact info to edit the info.

10.1.1.8. Event Action

It relies on the **Event Action** tabbed page to enable/disable the event(s) that will launch action(s) from the **Management Server**, including the server abnormality such as exhausted disk space and the failure to write to the disk drive.

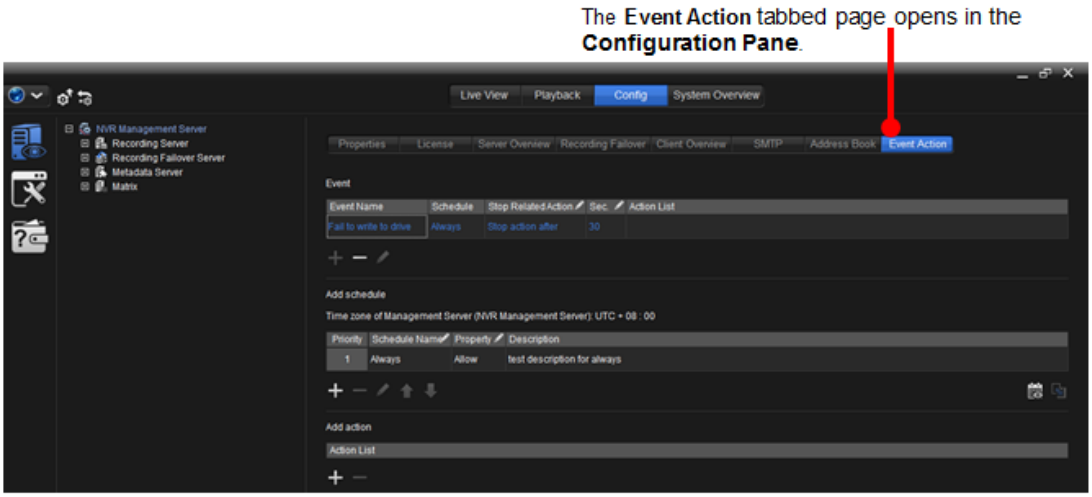
To access the **Event Action** tabbed page for the **Management Server**:

1. From the **Tree Console**, click the topic **Management Server**.

   The **Properties** tabbed page then opens in the **Configuration Pane** by default.

2. Click the **Event Action** tab.

   The **Event Action** tabbed page then opens in the **Configuration Pane**.



The featured settings are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ Available event is **Fail to write to drive**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
		Edits the selected event. ▸ Click any of the event info cells to edit the info.
		Copies the event setting to another networked device.
	Event Name	Delivers the event type. ▸ **Fail to write to drive**.
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Stop action on NuClient including **Video Edge Display** and **Play Alert Sound**.
	Sec.	Sets when to stop the related action launched by the **Management Server** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action List	Delivers all the actions set up for the **Management Server** to take when the

		event occurs.
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
	✎	Edits the selected **schedule**. ▸ Click a **schedule** to select it.
	↑	Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
	↓	Moves the selected **schedule** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	1. Delivers the name of the schedule. 2. Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **Management Server** to take when the event occurs.
	+	Adds an action for the **Management Server** to take when the event occurs.
	−	Deletes the selected action. ▸ Click an action to select it.
	Action Properties	Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) This group of settings is available only when any of the available actions is added.

10.1.2. Configure Recording Server

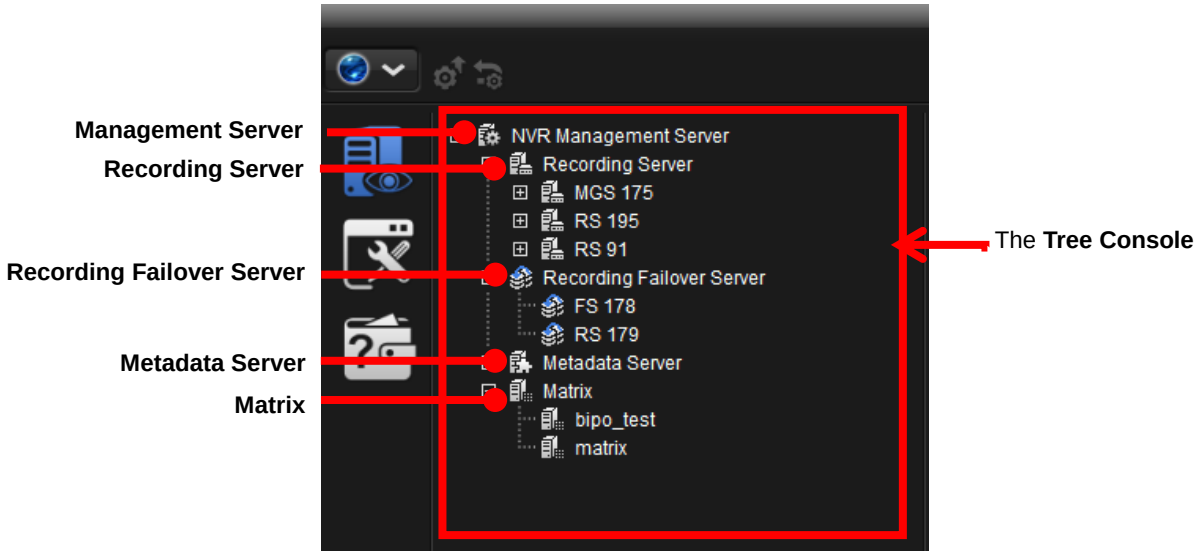
A **Recording Server** is a server right under the control of the **Management Server** to control one or more "video device(s)" that further controls one or more camera(s) or camera DI/DO.

There are two service types of **Recording Server**: **recording** and **failover**. When choosing **failover** type on **Recording Server** Properties, the server will become **Recording Failover Server**.

To access the setting of a **Recording Server**:

1. Access the **Physical Config** as described in Physical Config (Management Server).

   The physical configuration opens onscreen, and the **Tree Console** shows the topics: **Management Server, Recording Server, Recording Failover Server**, **Metadata Server**, and **Matrix**.



   The **Properties** tabbed page then opens at the **Configuration Pane** to configure the selected **Recording Server** while the other five tabbed pages are hidden.

2. Access one of these tabbed pages to configure the **Recording Server**.

   A function overview of these tabbed pages:

Tab	Description
Properties	1. Enables/disables the **Recording Server**. 2. Choose the service type of the Recording Server, including **Recording** and **Failover**. Once choose **Failover** mode, the server will be moved to Recording Failover Server category on Tree list. 3. Enters a brief description of the **Recording Server** for the better identification of it. 4. Launches an application to detect and install the available cameras within the network. ▸ See Properties for the settings.
Device Overview	Delivers a general view of the cameras connected to the **Recording Server**.
Volume Group	Allocates the RAID disk volume for a camera to save the recorded videos to.(One or more disk drives are working for the **Recording Server** as a logical drive.)

	▸ Video recording requires a volume. ▸ For RAID setting please go to RAID and File System.
Recording Schedule	Delivers a general view of the video recording schedules of all the video devices (i.e. cameras) connected to a **Recording Server**. ▸ See Schedule to set the video recording schedule.
Auto Backup	Manages the backup for the videos recorded on the selected period. ▸ The **Auto Backup** requires two major settings, one is the backup schedule and the other is FTP server setting.
Event Action	Sets the events and actions for the **Recording Server**.
Local Display	Directly stream out live view video from the **Recording Server** to the monitor which is connected to Crystal VGA port.

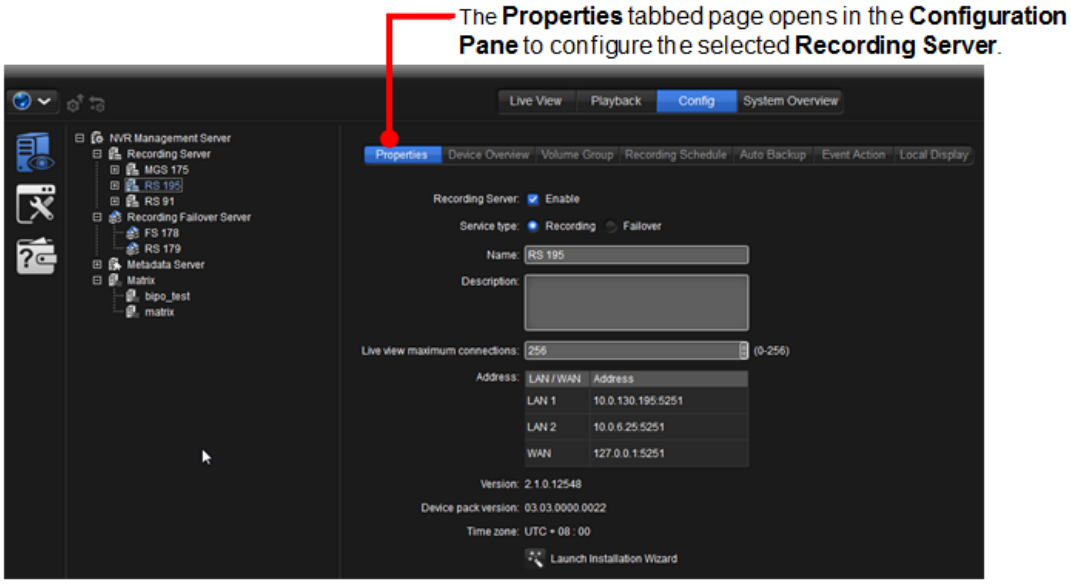
10.1.2.1. Properties

It relies on the **Properties** tabbed page to enter the information about the **Recording Server** including the name and description, or to launch the Installation Wizard.

To access the **Properties** tabbed page of the **Recording Server** to configure:

1. From the **Tree Console**, click the topic **Recording Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.



   The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Enable	Enables/disables the Recording Server.	Selected (Enabled)
Service Type	Choose the service type of the Recording Server, including	Recording

<table>
<tr><td></td><td>Recording and Failover.
Once choose Failover mode, the server will be moved to Recording Failover Server category on Tree list.</td><td></td></tr>
<tr><td>Name</td><td>Names the Recording Server.</td><td>“Recording Server #”</td></tr>
<tr><td>Description</td><td>Provides a brief description for this Recording Server for the easier identification of it.</td><td>“Recording Server # description”</td></tr>
<tr><td>Address</td><td>Delivers the following addresses:<table><tr><th>Setting</th><th>Description</th></tr><tr><td>LAN1</td><td>Delivers the server’s LAN port 1’s currently networked IP address.
▸ If the LAN port isn’t in use, the networking status isn’t available.</td></tr><tr><td>LAN 2</td><td>Delivers the server’s LAN port 2’s currently networked IP address.
▸ If the LAN port isn’t in use, the networking status isn’t available.</td></tr><tr><td>WAN</td><td>Delivers the server’s WAN address.
▸ If the WAN isn’t in use, the networking status isn’t available.</td></tr></table></td><td></td></tr>
<tr><td>Version</td><td>The version of Recording Server</td><td>--</td></tr>
<tr><td>Device pack version</td><td>The version of device pack</td><td></td></tr>
<tr><td>Time zone</td><td>The time zone of Recording Server</td><td></td></tr>
<tr><td>Launch Installation Wizard</td><td>Launches an application to detect and configure Crystal within the network.</td><td>--</td></tr>
</table>

10.1.2.2. Device Overview

It relies on the **Device Overview** tabbed page to get a general view of all the physical devices connected to the **Recording Server**, including the **Video Devices** and **IO devices**.

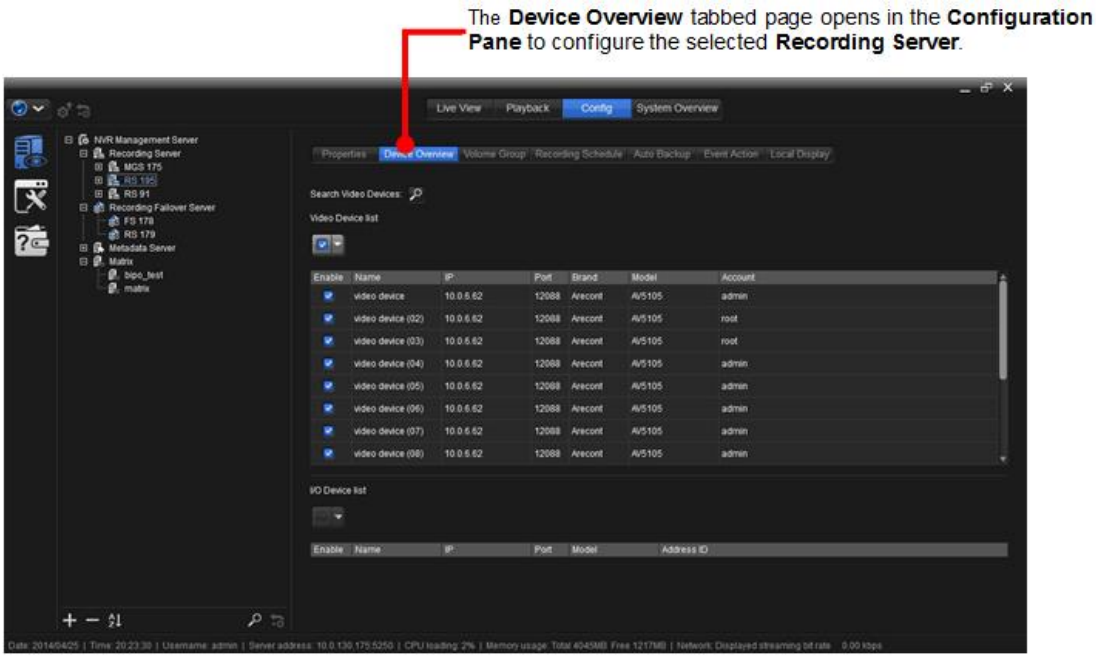
To access the **Device Overview** tabbed page that configures the **Recording Server**:

1. From the **Tree Console**, click the topic **Recording Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Device Overview** tab.

The **Device Overview** tabbed page then opens.



The featured settings on the **Device Overview** tabbed page are:

Group	Setting	Description	Default
Search Video Devices		Opens a **Search Video Devices** dialog to search for the available **Video Devices** to add them to the Recording Server.	--
Video Device List		Select the drop-downs **All**, **None** or **Invert** to select all **Video Devices**, deselect all **Video Devices** or reverse the selection.	**All** (All **Video Devices** are selected.)
	Enable	Enables/disables the **Video Device**.	Selected (Enabled)
	Name	Delivers the name of the **Video Device**. ▸ See Properties to know how to set the name for the **Video Device**.	--
	IP	Delivers the IP address of the **Video Device**. ▸ See Properties to know how to set the IP address for the **Video Device**.	--
	Port	Delivers the port of the **Video Device**. ▸ See Properties to know how to set the port for the **Video Device**.	--
	Brand	Delivers the brand of the **Video Device**. ▸ See Properties to know how to set the brand for the **Video Device**.	--
	Model	Delivers the model name of the **Video Device**. ▸ See Properties to know how to set the model name for the **Video Device**.	--
	Account	Video device user account display	

I/O Device List		Select the drop-downs **All**, **None** or **Invert** to select all devices, deselect all devices or reverse the selection.	**All** (All devices are selected.)
	Enable	Enables/disables the **I/O device**.	Selected (Enabled)
	Name	Delivers the name of the **I/O device**.	--
	IP	Delivers the IP address of the **I/O device**.	--
	Port	Delivers the port of the **I/O device**.	--
	Model	Delivers the model name of the **I/O device**.	--
	Address ID	I/O device address ID display	--

10.1.2.3. Volume Group

It relies on the **Volume Group** tabbed page to allocate the RAID disk volume for a camera to save the recorded videos to. The volume is required for video recording.

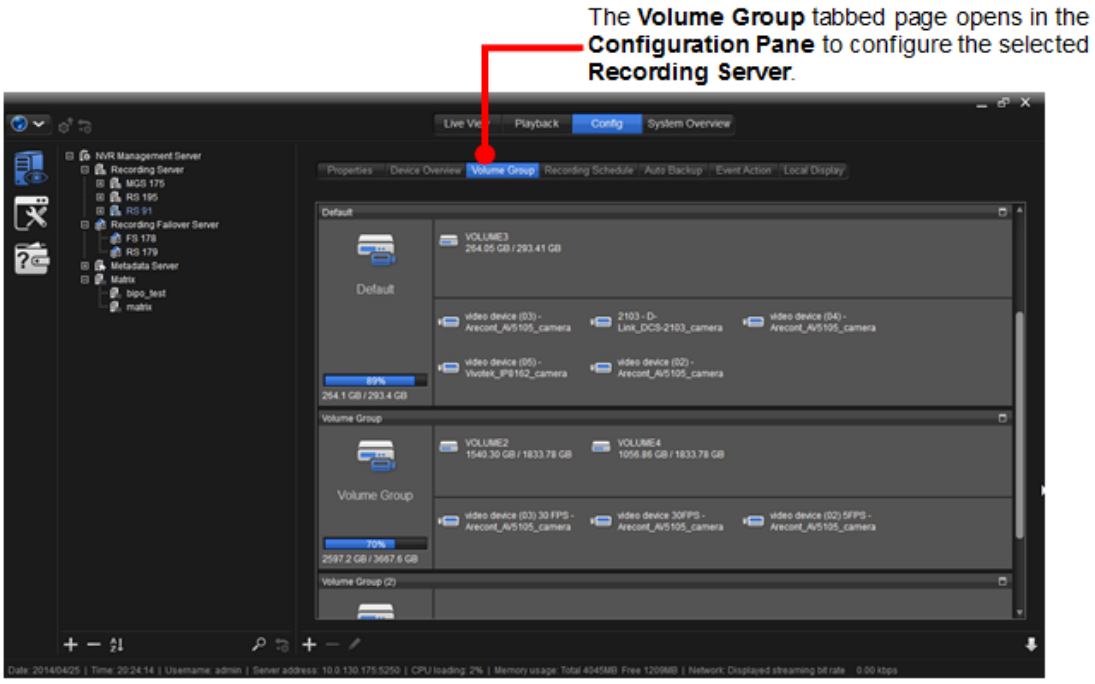
To access the **Volume Group** tabbed page that configures the **Recording Server**:

1. From the **Tree Console**, click the topic **Recording Server**.

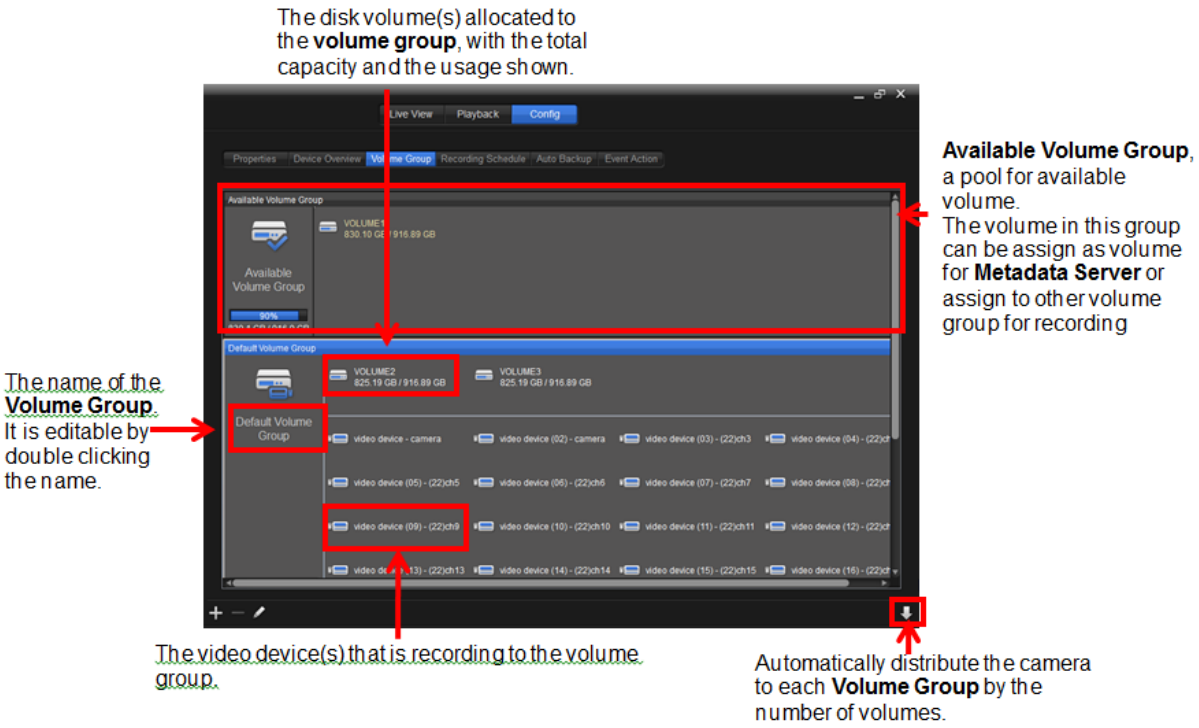
   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Volume Group** tab.

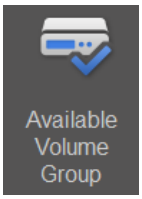
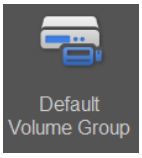
   The **Volume Group** tabbed page then opens.



Take a closer look at the user interface. The **Volume Group** tabbed page actually shows all the existing **volume group(s)**, with the info about the allocated volume(s).


The disk volume(s) allocated to the **volume group**, with the total capacity and the usage shown.
Available Volume Group, a pool for available volume. The volume in this group can be assign as volume for **Metadata Server** or assign to other volume group for recording
The name of the **Volume Group**. It is editable by double clicking the name.
The video device(s) that is recording to the volume group.
Automatically distribute the camera to each **Volume Group** by the number of volumes.

The featured settings and icons are:

Setting / Item	Name	Description
+	Adds a new Volume Group	-
−	Deletes a Volume Group	-
	Edits the name of selected Volume Group.	-
	Distributed camera	Automatically distribute the camera to each Volume Group by the number of volumes.
	Available Volume Group	Available volume pool for new volumes added to the system. ▸ All new added volumes in the Recording Server will be assigned to Available Volume Group. ▸ Volumes on Available Volume Group will not record and it's available to be assigned as Metadata database or Recording Server video recording.
	Default Volume Group	The pre-created Volume Group in the Recording Server. ▸ By default, all new added cameras in the Recording Server will be assigned to Default Volume Group
	Volume for Video Recording	Volumes assigned to Volume Group can be used to store video data.
	Volume for Metadata database	Volume on Available Volume Group can be assigned to store Metadata database. Volumes assigned to store Metadata can not be assigned to camera recording.

	Remember to assign volumes from Available Volume Group to Volume Groups to start record.

10.1.2.4. Recording Schedule

It relies on the **Recording Schedule** tabbed page to get a general view of the video recording schedules of all the video devices (i.e. cameras) connected to a **Recording Server**.

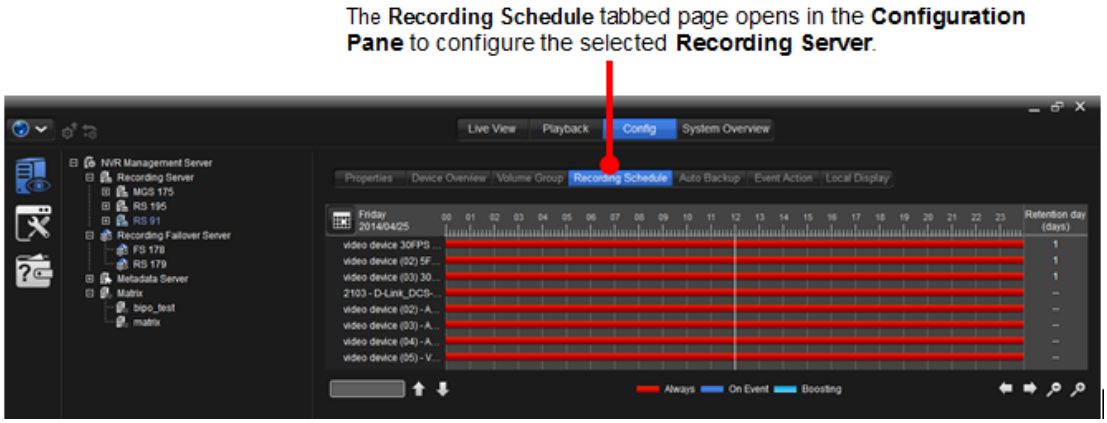
To access the **Recording Schedule** tabbed page that configures the **Recording Server**:

1. From the **Tree Console**, click the topic **Recording Server**.

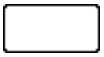
   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Recording Schedule** tab.

The **Recording Schedule** tabbed page then opens.



The featured settings on the **Recording Schedule** tabbed page are:

Setting / Item	Description
	Switches the **schedule table** to any other calendar day.
schedule table	Click and drag on the **schedule table** to view other time slots.
	Search the keyword of schedule
	Focuses on the previous searched result.
	Focuses on the next searched result.
Always	Delivers the times slots in which the video recording is on unconditionally. ▸ See Add A Scheduleto know how to change the setting.
On Event	Delivers the times slots in which the video recording is on when an **event** occurs. ▸ See Add A Schedule to know how to change the setting.
Boosting	Delivers the times slots in which the video are recorded with higher frame rate. ▸ See Add A Schedule to know how to change the setting.
	Scrolls the **schedule table** to the left.
	Scrolls the **schedule table** to the right.
	Zooms out the **daily time schedule table** to bring more time slots into view.
	Zooms in the **schedule table** to view the time slots in a more specific way.
Recycle condition	Delivers how long to keep the recorded videos for.

10.1.2.5. Auto Backup

It relies on the **Auto Backup** tabbed page to auto back up the videos recorded on the previous day to a FTP server. For such auto backup, it requires the backup schedule setting and the FTP server setting.

To access the **Auto Backup** tabbed page that configures the **Recording Server**:

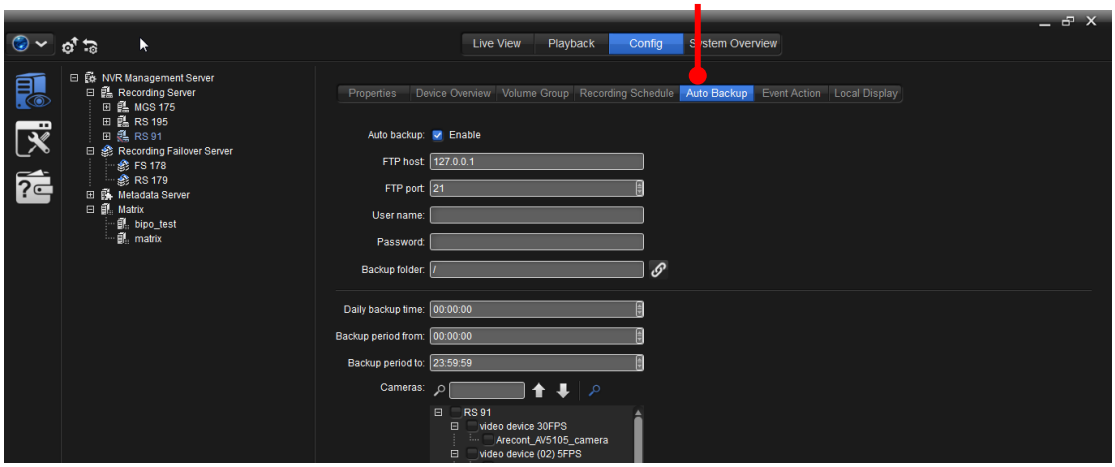
1. From the **Tree Console**, click the topic **Recording Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Auto Backup** tab.

   The **Auto Backup** tabbed page then opens.

The **Auto Backup** tabbed page opens in the **Configuration Pane** to configure the selected **Recording Server**.



The featured settings on the **Auto Backup** tabbed page are:

Group	Setting	Description	Default
Auto backup:	Enable	Enables/disables the **auto backup** feature for the **Recording Server**.	Disabled
FTP server setting	**FTP host**	Sets the IP address or server name of the backup FTP server.	--
	FTP port	Sets the port number of the backup server.	--
	Username	Enters the username to log in the backup FTP server.	--
	Password	Enters the password to log in the backup FTP server.	--

	Backup folder	Specifies the folder to save the backup data to. ▸ The folder name should be the format of "Folder Name", "Folder Name/Sub Folder Name" and so on.	
	🔗	Runs a connection test to the configured FTP server.	--
Backup schedule setting	**Daily backup time**	Sets the daily time for the system to do the auto backup.	0:00:00
	Backup period from	Sets the start time of recorded video of the previous day.	0:00:00
	Backup period to	Sets the end time of recorded video of the previous day.	23:59:59
	Cameras	Sets the channel(s) to back up the videos for.	Deselected.

10.1.2.6. Event Action

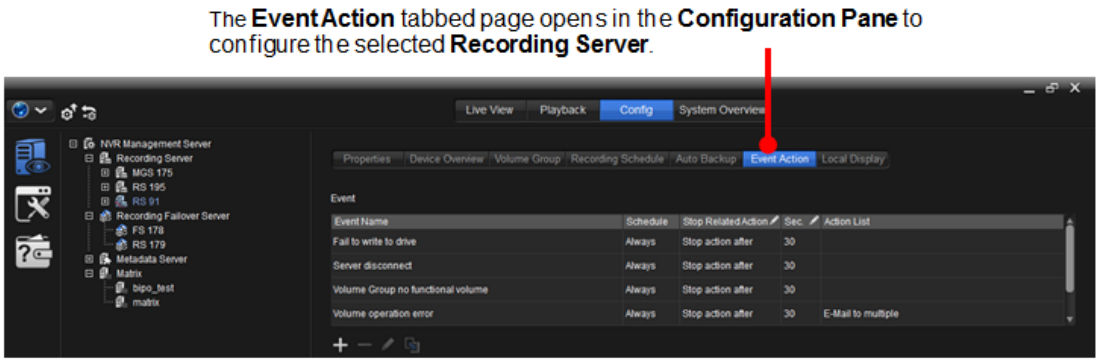
It relies on the **Event Action** tabbed page to enable/disable the event(s) that will launch action(s) from the **Recording Server**, including the server abnormality such as server disconnection or the failure to write to the disk drive.

To access the **Event Action** tabbed page for the **Recording Server**:

1. From the **Tree Console**, click the topic **Recording Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Event Action** tab.
   The **Event Action** tabbed page then opens.



The featured settings on the **Event Action** tabbed page are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ Available events are **Server disconnect**, **Fail to write to drive** and **Auto backup failed**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
	✎	Edits the selected event. ▸ Click any of the event info cells to edit the info.
		Copies the event setting to another **device**.
	Event Name	Delivers the event type. ▸ Available event type: ▸ Fail to write to drive ▸ Server disconnect ▸ Volume group no functional volume ▸ Volume operation error ▸ Recording module error ▸ Auto backup fail No available Failover Server for disconnected Recording Server
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Stop action after __Sec.
	Sec.	Sets when to stop the action launched by the **Recording Server** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action list	Delivers all the actions set up for the **Recording Server** to take when the event occurs.
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
	✎	Edits the selected **schedule**. ▸ Click a **schedule** to select it.
	↑	Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
	↓	Moves the selected **schedule** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	Delivers the name of the schedule. ▸ Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.

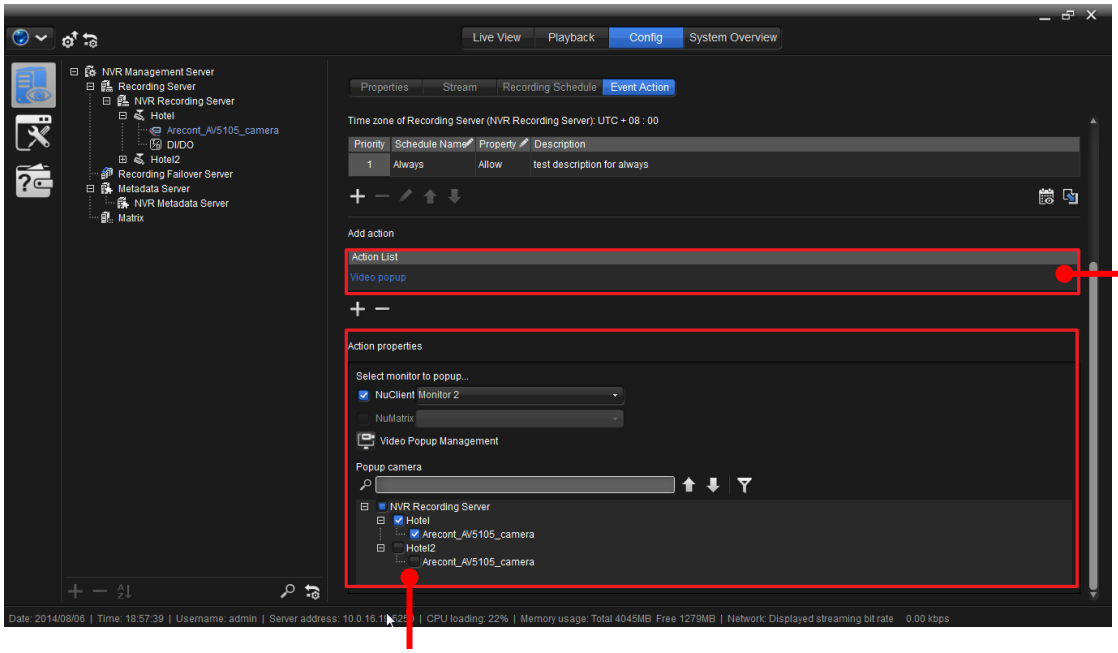
Add action	**Action List**	Delivers all the actions set up for the **Recording Server** to take when the event occurs.
	+	Adds an action for the **Recording Server** to take when the event occurs.
	−	Deletes the selected action. ▸ Click an action to select it.
Action properties		Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Sets which associated camera to go to the "preset point" (for **Go to Preset**). ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) ▸ No detail setting for Video Edge Display(for **Video Edge Display**) ▸ Sets which camera to popup on which monitor(for **Video Popup**) This group of settings is available only when any of the available actions is added.

10.1.2.6.1. Video Popup

Video Popup is a type of action that assigned associated video(s) will automatically popup to grid(s) on assigned client monitor when an event happens.
This action is supported on both NuClient and NuMatrix(Ultimate level).

To configure a Video Popup:

1. On Event Action tab, choose an event that supports Video Popup
2. Add **Video Popup** action
3. Edit Video Popup action on **Action properties**
4. Assign NuClient, NuMatrix, or both, to popup video.
5. Choose one monitor to popup video.
6. Choose the camera as the source of video popup.
7. After assigning application, monitors, and cameras on Config tab, please go to Live View tab for Video Popup Viewing setting.



The featured settings on the **Action Properties** of Video Popup are:

Group	Icon / Setting		Description
Action Properties	Select monitor to popup		Overview the relationship of all events, video sources and monitors for video popup action by **Video Popup Management**. Quick edit is available on Video Popup management.
	Popup Camera		Insert the camera name to search.
			Search previous.
			Search next.
			Only show the camera selected.

Remember to assign Video Popup grid on Live View tab.

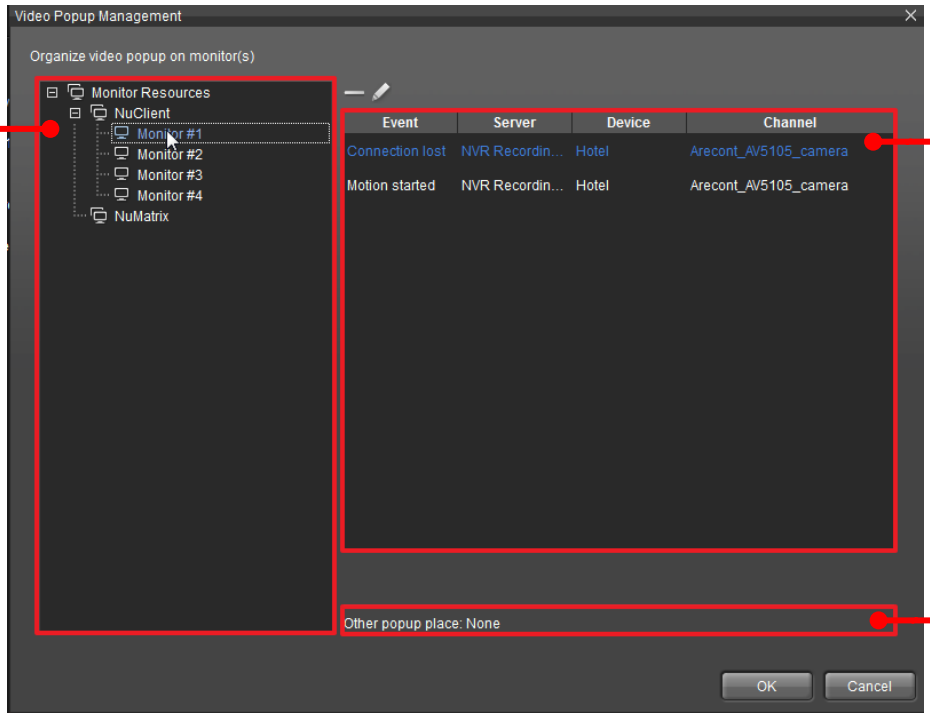
10.1.2.6.1.1. Video Popup Management

Video Popup Management provides an overview the relationship of all events, video sources and monitors for Video Popup action.

To configure a Video Popup Management:

1. On Event Action tab, choose an event that supports Video Popup

2. Add **Video Popup** action
3. Edit Video Popup action on **Action properties**
4. Click on , the setting windows then popup:



The monitor source that can assign Video Popup.

The event that sets Video Popup on the monitor.

Displays if the focused event will popup video on other monitor.

The featured settings on the Video Popup Management are:

Icon	Description
	For the chosen event, remove the monitor to popup video.
	For the chosen event, edit the monitor to popup video.

10.1.2.7. Local Display

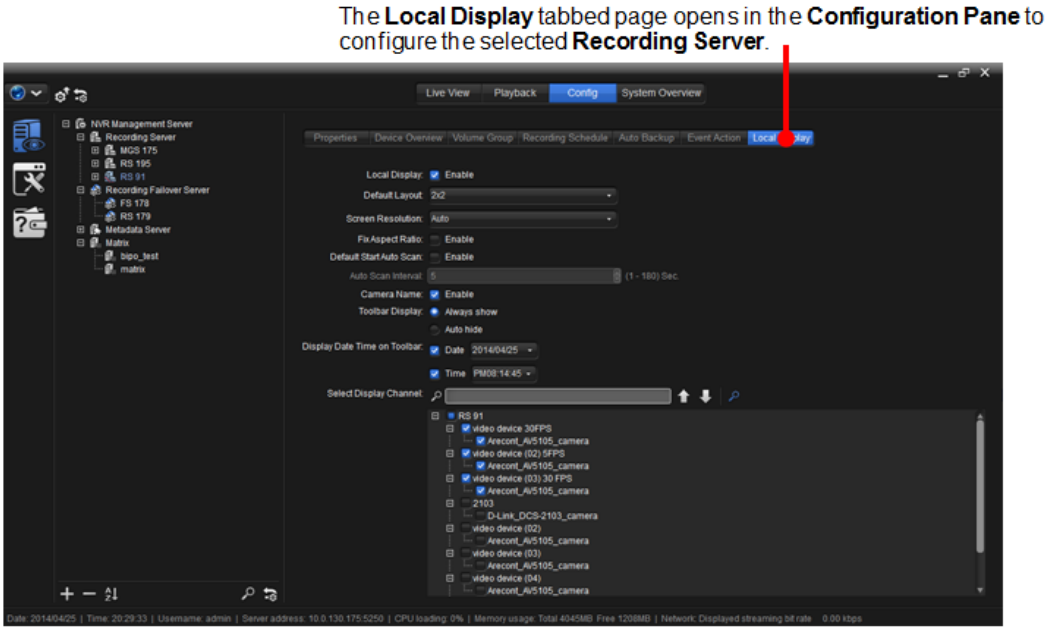
It relies on the **Local Display** tabbed page to directly stream out live view video from the Recording Server to the monitor which is connected to Crystal VGA port.

To access the **Local Display** tabbed page for the **Recording Server**:

1. From the **Tree Console**, click the topic **Recording Server**.
   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Local Display** tab.

   The **Local Display** tabbed page then opens.



The featured settings on the **Local Display** tabbed page are:

Group	Setting	Description	Default
Local Display:	☑ Enable	Enables/disables the **Local Display** feature for the **Recording Server**.	Disabled
Display Setting	**Default Layout**	The default layout of the monitor connected to Crystal.	2x2
	Screen Resolution	Choose the resolution of screen display; the selections of resolutions will be shown when connecting with a screen.	Auto
	Fix Aspect Ratio	Check the box to make all videos fix the aspect ratio.	Disable
	Default Start Auto Scan	Check the box to enable auto scan when live viewing.	Disable
	Auto Scan Interval	The time interval of auto scan	5 secs
	Camera Name	Check the box to enable OSD of camera name.	Enabled
	Toolbar Display	Choose to hide the toolbar or always show it on the screen. If you choose “Hide”, toolbar can still be shown when moving the cursor.	Always show
	Display Date Time on Toolbar	Check the boxes to display date/time on toolbar.	Enabled
Display Channel	**Select Display Channel**	Choose the channels to local display on monitor.	All disabled.

10.1.2.8. Add A Video Device / IO Device

To add a **Video Device** or **IO device** to a **Recording Server**:

1. From the **Tree Console**, click the topic **Recording Server**.

2. If a plus sign (+) shows besides the sub topic **Recording Server**, click the plus sign (+) to collapse the existing **Recording Server**(**s**). Then click the **Recording Server** to configure.

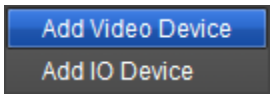
   OR

   If a minus sign (-) shows besides the sub topic **Recording Server**, the existing **Recording Server**(**s**) collapse already. Simply click the **Recording Server** to configure. Click the **Recording Server** to add the **Video Device** or **IO device** to.

   The **Recording Server** becomes highlighted.

3. From the bottom of the **Tree Console**, click the add icon +.

   A tiny dialog then opens showing the options of **Add Video Device** and **Add IO Device**.

4. Click **Add Video Device** to add a **Video Device**.

   OR

   Click **Add IO Device** to add an **I/O device**.

   A new **Video Device**, named “video device” by default, or a new **I/O device**, named “io device” by default”, will be appended under the selected **Recording Server**, and a **Properties** tabbed page will open in the **Configuration Pane** for users to configure the newly added **Video Device** or **I/O device**.

To configure a **Video Device**, see Configure A Video Device.
To configure an **IO device**, see Configure An IO Device.

10.1.2.9. Delete A Video Device / IO Device

To delete a **Video Device** or **IO device** from a **Recording Server**:

1. From the **Tree Console**, click the topic **Recording Server**.

2. Click the **Recording Server** to delete the **Video Device** or **I/O device** from.

   The **Recording Server** becomes highlighted

3. If a plus sign (+) shows besides the **Recording Server**, click the plus sign (+) to collapse the existing **Video Device**(**s**) and **IO device**(**s**). Then click the device to delete.

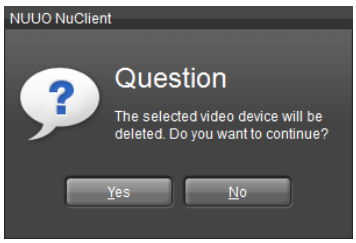
   OR

   If a minus sign (-) shows besides the **Recording Server**, the existing **Video Device**(**s**) and **IO device**(**s**) collapse already. Simply click the device to delete.

   The device to delete becomes highlighted.

4. From the bottom of the **Tree Console**, click the delete icon −.

   A question dialog opens to ask for the confirmation of deletion.



5. Click **Yes** to confirm the deletion.

6. Click the **apply button** on the **Top Toolbar** to apply the change.

10.1.2.10. Configure A Video Device

To configure a **Video Device**:

1. From the **Tree Console**, click the topic **Recording Server**.

2. If a plus sign (+) shows besides the sub topic **Recording Server**, click the plus sign (+) to collapse the existing **Recording Server**(**s**). Then click the **Recording Server** to configure.

   OR

   If a minus sign (-) shows besides the sub topic Recording Server, the existing Recording Server(s) collapse already. Simply click the Recording Server to configure.

3. Click the **Recording Server** to which the **Video Device** to configure belongs.

   The **Video Device** to configure becomes highlighted and the **Properties** tabbed page opens in the **Configuration Pane** while the **Camera** tabbed page is hidden by default.

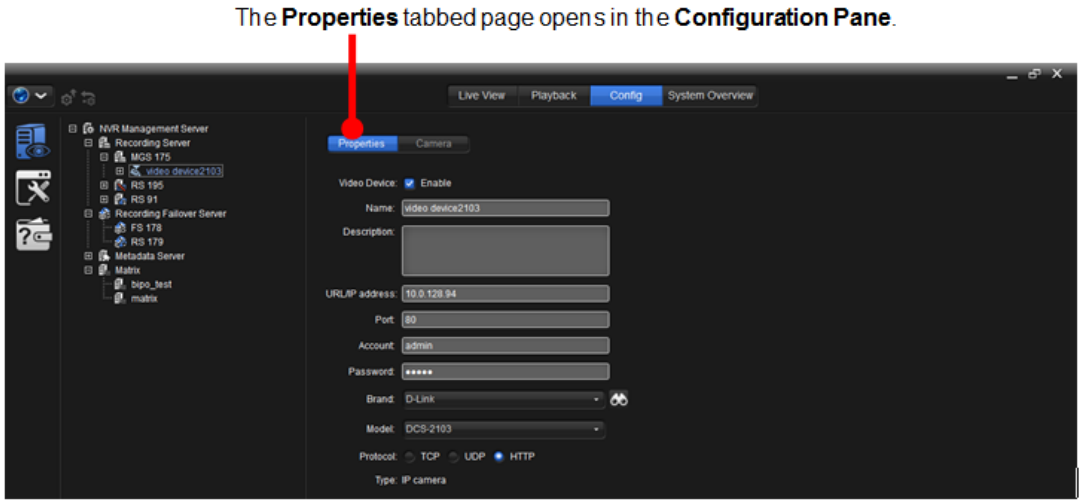
   See Properties for the settings featured on the **Video Device Properties** tabbed page.
   See Camera for the settings featured on the **Camera** tabbed page.

10.1.2.10.1. Properties

It relies on the **Properties** tabbed page to configure the properties of a **Video Device**:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the **Recording Server** to which the **video device** to configure belongs.

The **Properties** tabbed page opens in the **Configuration Pane** for the **Video Device** to configure.



The featured settings on the **Properties** tabbed page are:

Group	Description	Default
Video Device Enable ☑	Enables/disables the **Video Device**.	Selected (Enabled)
Name	Sets the name of the **Video Device**.	"video device"
Description	Provides a brief description of the **Video Device** for the better identification of it.	--
URL/IP address	Sets the URL or IP address of the **Video Device**.	127.0.0.1
Port	Sets the port of the **Video Device**.	80
Account	Sets the Username to access the **Video Device**.	admin
Password	Sets the password to access the **Video Device**.	--
Brand	Fill in the brand of the **Video Device**.	--
Model	Fill in the model name of the **Video Device**.	--
Protocol	Sets the protocol of the **Video Device**. ▸ Options available are: **TCP**, **UDP** and **HTTP**.	TCP

10.1.2.10.2. Camera

It relies on the **Camera** tabbed page to view the status of all the video channels controlled by a **Video Device**.

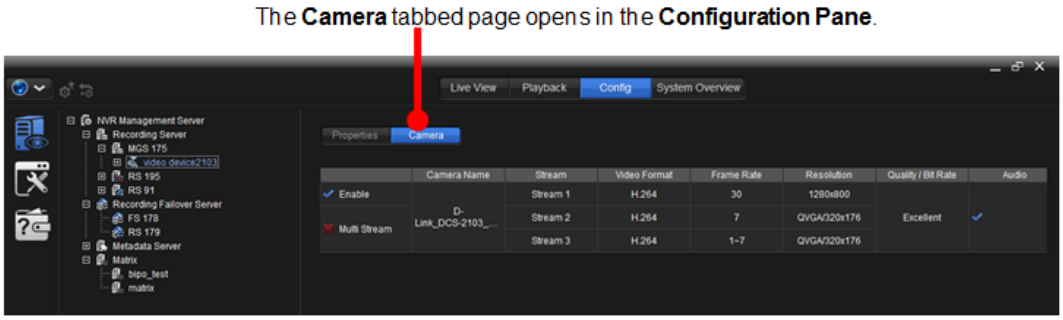
To access the **Camera** tabbed page of a **Video Device**:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **camera** to configure belongs.

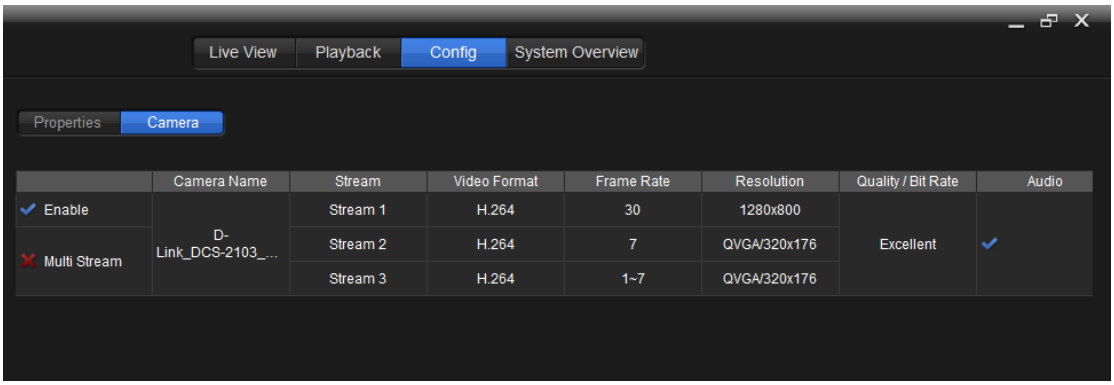
   The **Properties** tabbed page opens in the **Configuration Pane** for the **Video Device** to configure by default.

4. Click the **Camera** tab.

   The **Camera** tabbed page then opens.



Take a closer look at the tabbed page, which actually shows the statuses of all the camera(s) controlled by the **Video Device**.



Group	Description
Enable	Enables/disables the **camera**.
Multi stream	Enable/disable the multi stream
Camera Name	Delivers the name of the **camera**.
Stream	Delivers the stream quantity for **camera**.

Video Format	Delivers the video format of the **camera**.
Frame Rate	Delivers the frame rate of the video.
Resolution	Delivers the resolution of the video.
Quality	Delivers the quality of the video.
Audio	Delivers whether audio is enabled for the **camera**.
Lens	Delivers the lens for the **camera** use.
Lens Type	Special lens feature, such as fisheye **camera.**
Camera Position	Delivers where the **camera** locates for the special lens feature.

10.1.2.10.3. Configure A Camera

To configure a camera for the general properties, data streaming, recording schedule and event & action features:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **camera** to configure belongs.
4. If a plus sign (+) shows besides the **Video Device**, click the plus sign (+) to collapse all the existing **camera**(**s**). Then click the **camera** to configure.

   OR

   If a minus sign (-) shows besides the **Video Device**, the existing **camera**(**s**) collapse already. Simply click the **camera** to configure.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **camera** to configure while the other tabbed pages are hidden by default.

   An overview of the tabbed pages featured:

Tabbed Page	Description
Properties	1. Enables/disables the **camera**. 2. Sets the name and brief description for the **camera**.
Stream	1. Enables/disables the stream profile. 2. Configures the **camera**'s stream profile setting.
Recording Schedule	3. Delivers a general view of the **camera**'s video recording schedule. 4. Configures the **camera**'s video recording schedule and other recording features.
Event Action	Sets the event(s) that will launch action(s) from the **camera**.

10.1.2.10.3.1. Properties

It relies on the **Properties** tabbed page to configure a camera for the general properties such as the title and a brief description.

To access the **Properties** tabbed page of a camera:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **camera** to configure belongs.

4. If a plus sign (+) shows besides the **Video Device**, click the plus sign (+) to collapse all the existing **camera**(**s**). Then click the **camera** to configure.

   OR

   If a minus sign (-) shows besides the **Video Device**, the existing **camera**(**s**) collapse already. Simply click the **camera** to configure.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **camera** to configure while the other tabbed pages are hidden by default.

The **Properties** tabbed page opens in the **Configuration Pane**.

The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Camera ☑**Enable**	Enables/disables the **camera**.	Enable
Name	Names the **camera**.	Default name

Description	Provides a brief description of the **camera** for the better identification of it.	--

10.1.2.10.3.2. Stream

It relies on the **Stream** tabbed page to configure a camera for the general properties such as the title and a brief description.

To access the **Stream** tabbed page of a camera:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **camera** to configure belongs.

4. If a plus sign (+) shows besides the **Video Device**, click the plus sign (+) to collapse all the existing **camera**(**s**). Then click the **camera** to configure.

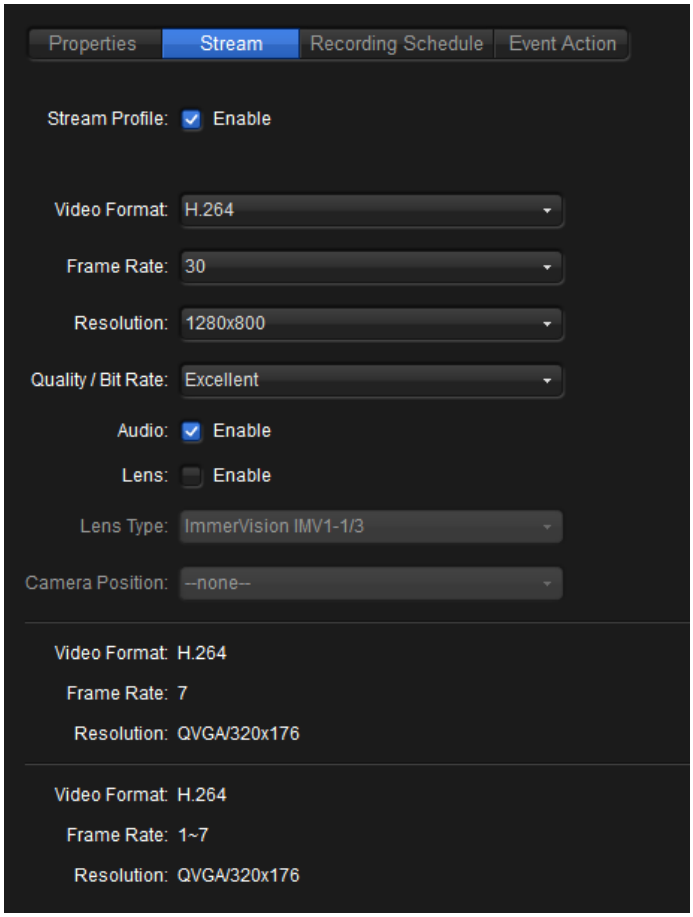
   OR

   If a minus sign (-) shows besides the **Video Device**, the existing **camera**(**s**) collapse already. Simply click the **camera** to configure.

5. Click the **Stream** tab.

   The **Stream** tabbed page opens in the **Configuration Pane** for the **camera** to configure by default.

Take a closer look at the user interface.



The featured settings on the **Stream** tabbed page are:

Setting	Description	Default
Stream Profile	Enables/disables the **camera**.	Disable
Video Format	Sets the video format for the **camera**.	Base on camera integration.
Frame Rate	Sets the frame rate for the video. ▸ Frame rate per sec. are configurable.	Base on camera integration.
Resolution	Sets the resolution for the video.	Base on camera integration.
Quality	Sets the quality for the video.	Base on camera integration.
Audio	Enables/disable the audio for the **camera**.	Base on camera integration.
Lens	Enables/disable the lens for the **camera**.	Base on camera integration.
Lens type	Sets the lens type for the **camera**.	Base on camera integration.
Camera Position	Sets the camera position for the **camera**.	Base on camera integration.

Format/Frame rate and Resolution	Delivers the multi stream information for the **camera.**	Base on camera integration.
Format/Frame rate and Resolution	Delivers the multi stream information for the **camera**.	Base on camera integration.

10.1.2.10.3.3. Recording Schedule

It relies on the **Recording Schedule** tabbed page to get a general overview of a camera's recording schedule, or to configure the camera's recording schedule:

To access the **Recording Schedule** tabbed page of a camera:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **camera** to configure belongs.

4. If a plus sign (+) shows besides the **Video Device**, click the plus sign (+) to collapse all the existing **camera**(**s**). Then click the **camera** to configure.

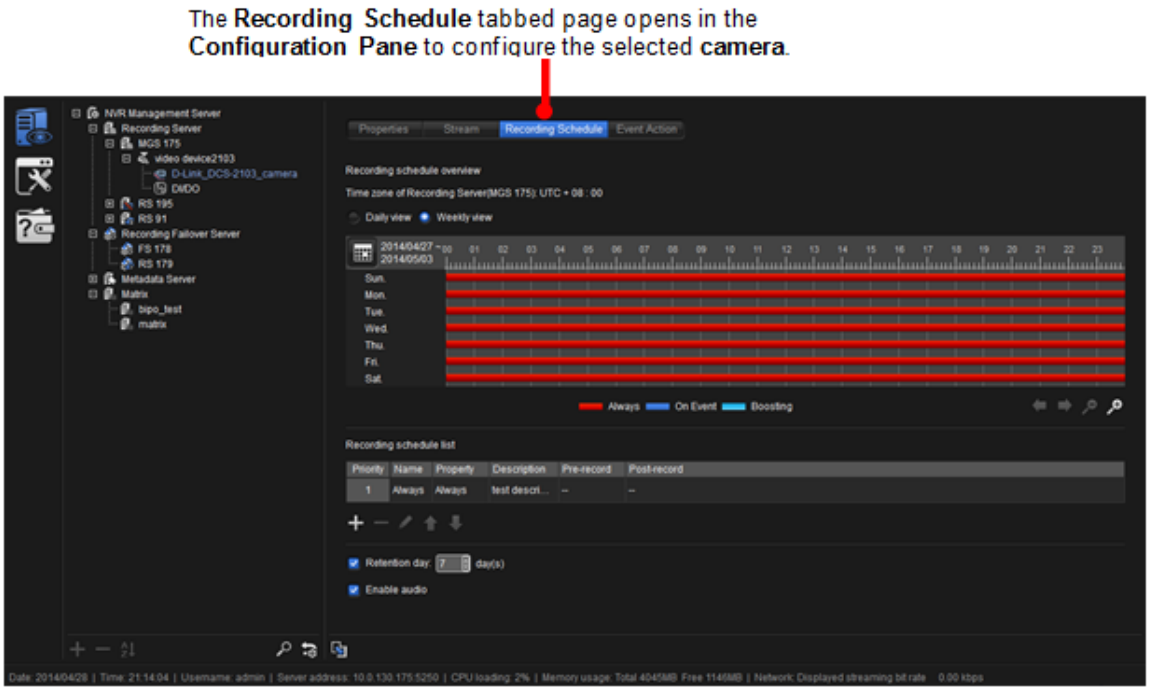
   OR

   If a minus sign (-) shows besides the **Video Device**, the existing **camera**(**s**) collapse already. Simply click the **camera** to configure.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **camera** to configure by default.

5. Click the **Recording Schedule** tab.

   The **Recording Schedule** tabbed page opens in the **Configuration Pane**.



The featured settings on the **Recording Schedule** tabbed page are:

Group	Setting	Description
Recording schedule overview	**Daily view**	Shows the **schedule table** in a daily view.
	Weekly view	Shows the **schedule table** in a weekly view.
		Switches the **schedule table** to any other calendar day.
	schedule table	Click or drag on the **schedule table** to view other time slots.
		Moves the selected **Video Device** up.
		Moves the selected **Video Device** down.
	Always	Delivers the times slots in which the video recording is on unconditionally. See Add A Schedule to know how to change the setting.
	On Event	Delivers the times slots in which the video recording is on when an **event** occurs. See Add A Schedule to know how to change the setting.
	Boosting	Delivers the times slots in which the video are recorded with original frame rate when an **event** occurs, and lower frame rate when no **event** occurs. See Add A Schedule to know how to change the setting.
		Scrolls the **schedule table** to the left.
		Scrolls the **schedule table** to the right.
		Zooms out the **daily time schedule table** to bring more time slots into view.
		Zooms in the **schedule table** to view the time slots in a more specific way.
Recording	**Name**	Delivers the name of the schedule.

schedule list	**Property**	Delivers how videos are recorded, **Always**, **On Event** or **Boosting**. ▸ See Add A Scheduleto know how to change the setting.
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
	+	Opens a dedicated page to add a **recording schedule** to a camera. ▸ See Add A Schedule for the details.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
	✎	Edits the selected **schedule**. ▸ Click a **schedule** to select it.
	↑	Moves the selected **schedule priority** up. ▸ Click a **schedule** to select it.
	↓	Moves the selected **schedule priority** down. ▸ Click a **schedule** to select it.
Others	**Retention Days**	Sets the retention days of the recorded video. ▸ 1 to 999 is configurable.
	Enable Audio	Enables/disables audio recording.

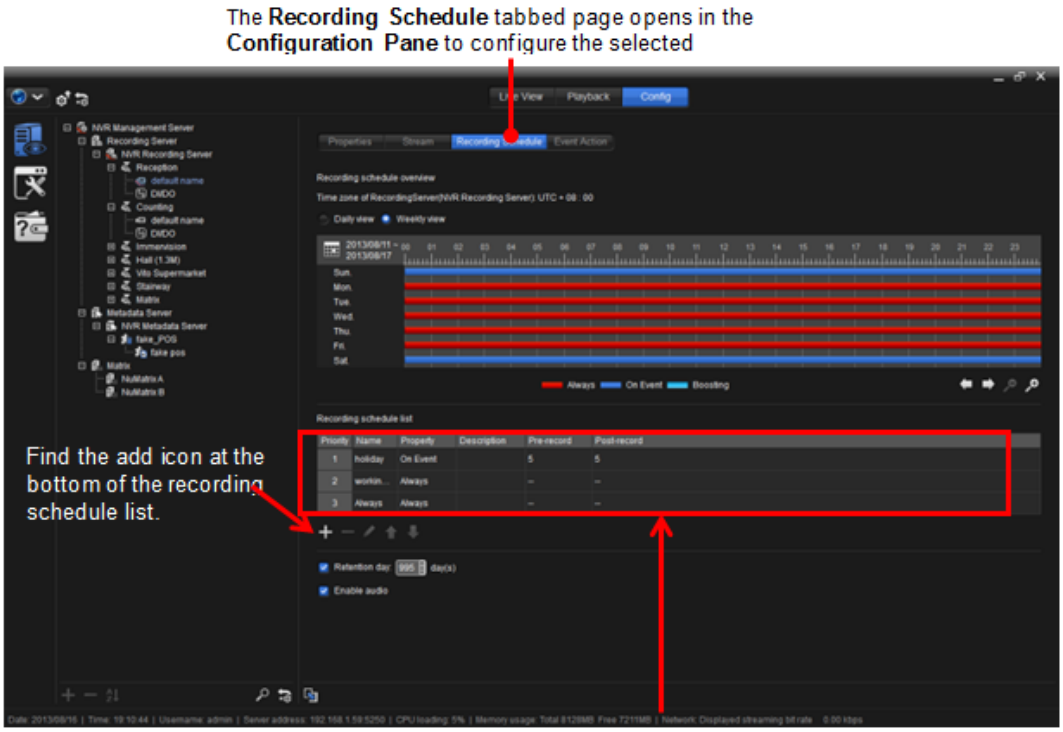
10.1.2.9.3.3.1. Add A Recording Schedule to A Camera

On the **Recording Schedule** tabbed page, the **recording schedule list** is featured to deliver the **recording schedule(s)** of a camera. It is also a group of settings to configure the **recording schedule(s)** of a camera. The group of settings features a add sign icon + to add a **recording schedule** to a camera. Click such + icon to open a dedicated page to add a **recording schedule** to a camera.

To open the dedicated page to add a **recording schedule** to a camera:

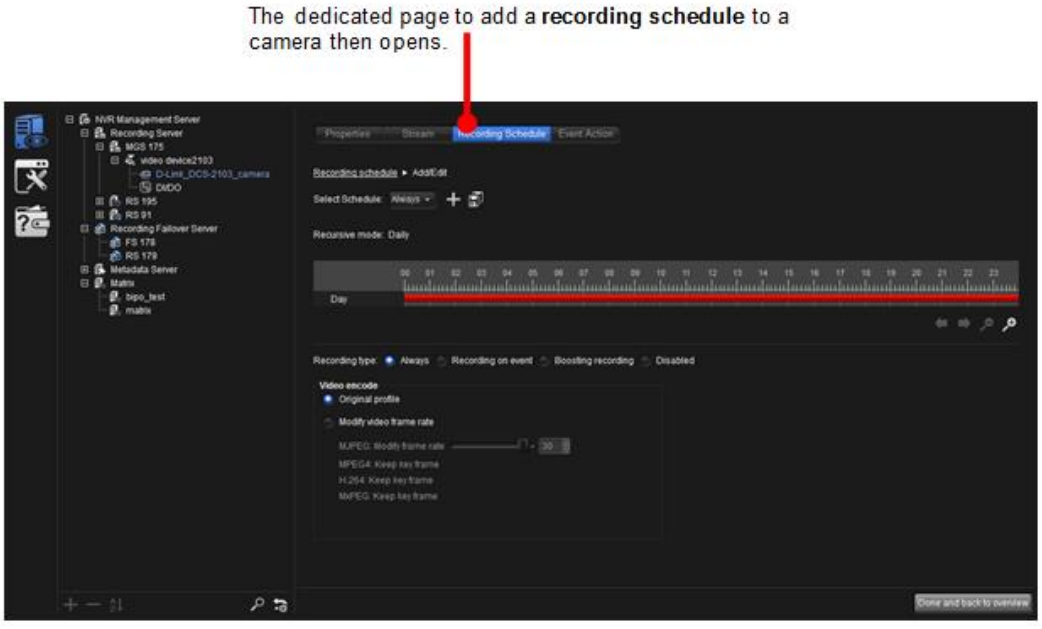
1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **camera** to configure belongs.
4. Open the **Recording Schedule** tabbed page of a camera.

The **Recording Schedule** tabbed page opens in the **Configuration Pane**.


The Recording Schedule tabbed page opens in the Configuration Pane to configure the selected
Find the add icon at the bottom of the recording schedule list.
Find the recording schedule list group of settings in the middle of the Recording Schedule tabbed page.

5. Find the **recording schedule list** group of settings in the middle of the **Recording Schedule** tabbed page. And find the **+** icon at the bottom of the **recording schedule list**.

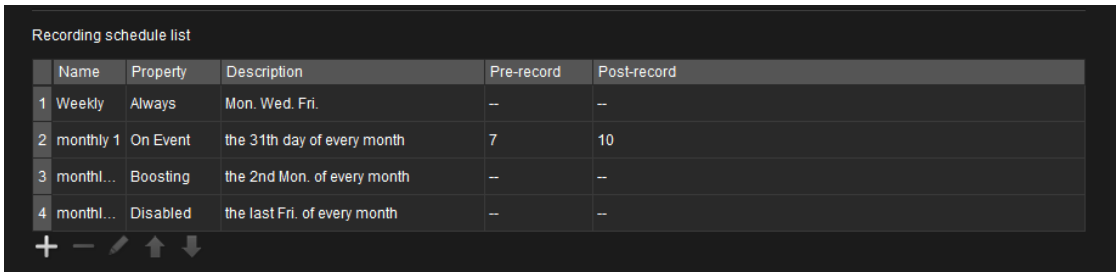
6. Click the **+** icon.
   The dedicated page to add a **recording schedule** to a camera then opens.



The featured settings are:

<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Select Schedule</td><td>Selects an existing schedule to add, or adds a new schedule to add.
▸ The existing schedules are the schedules created as described in Create A Schedule.
▸ Click the + icon on the right to create a new schedule.
▸ To create a new schedule, see Create A Schedule for more details.</td><td>The "Always" schedule</td></tr>
<tr><td>Schedule table</td><td>Shows the selected schedule or the schedule about to be added in an overview table.</td><td>--</td></tr>
<tr><td>Recording type</td><td>Sets how videos are recorded for the selected schedule or the schedule about to be added.
▸ Options available are:
<table>
<tr><th>Option</th><th>Description</th></tr>
<tr><td>Always</td><td>Records videos 24 hours a day.
▸ When set to Always, the Video encode setting becomes available. Select Modify video frame rate to be able to adjust the MJPEG video frame rate from 1 to 30.</td></tr>
<tr><td>Recording on Event</td><td>Records videos when an event occurs.
▸ When set to Recording on Event, the Video encode setting becomes available. Select Modify video frame rate to be able to adjust the MJPEG video frame rate from 1 to 30. Also available are the Pre-record and Post-record settings, which is configurable from 5 to 180 sec.
▸ When set to Recording on Event, the Event type setting also becomes available so users can set which event to trigger video recording.</td></tr>
<tr><td>Boosting recording</td><td>Records videos with original frame rate when an event occurs and lower frame rate when no event occurs.
▸ When set to Boost Recording, the Normal Video encode group of settings and Event Video encode group of settings both become available so users can set which frame rate to record videos when an event occurs or when nothing happens (“normally”). Select Modify video frame rate to be able to adjust the MJPEG video frame rate from 1 to 30.
▸ When set to Boost Recording, the Event typesetting also becomes available so users can set which event to trigger video boost recording.</td></tr>
<tr><td>Disabled</td><td>Disables video recording.</td></tr>
</table></td><td>Always</td></tr>
<tr><td>Video Encode</td><td>Selects the video format for the recording schedule.
▸ Available video encode are original profile and modify video frame rate.</td><td></td></tr>
</table>

Take a closer look at the **Recording schedule list**:


Recording schedule list
Name
Property
Description
Pre-record
Post-record
1 Weekly Always Mon. Wed. Fri. -- --
2 monthly 1 On Event the 31th day of every month 7 10
3 monthl... Boosting the 2nd Mon. of every month -- --
4 monthl... Disabled the last Fri. of every month -- --

The information delivered is:

Setting	Description
Name	Delivers the name of the schedule currently applied to the **camera**.
Property	Delivers when and how to record videos.
Description	Delivers the brief description of the schedule (profile).
Pre-record	Sets the time to start recording right before the scheduled time.
Post-record	Sets the time to keep recording after the scheduled time elapses.

The featured settings are:

Setting	Description
+	Click this add sign icon to open another page to add a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
✎	Edits the selected **schedule**. ▸ Click a **schedule** to select it.
↑	Moves the selected **schedule priority** up. ▸ Click a **schedule** to select it.
↓	Moves the selected **schedule priority** down. ▸ Click a **schedule** to select it.

10.1.2.10.3.4. Event Action

It relies on the **Event Action** tabbed page to enable/disable the event(s) that will launch action(s) from the **Camera**.

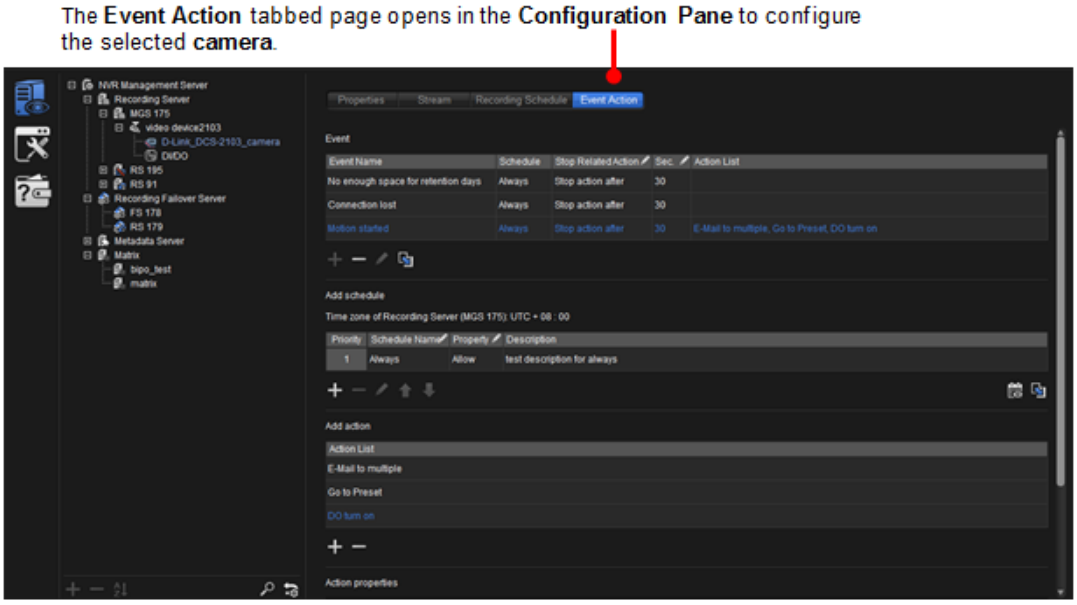
To access the **Event Action** tabbed page for the **Camera**:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **camera** to configure belongs.

By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

4. Click the **Event Action** tab.

The **Event Action** tabbed page then opens.



The featured settings on the **Event Action** tabbed page are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ Available events are **connection lost**, **No enough days for retention days** and **Motion started**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
	✎	Edits the selected event. ▸ Click any of the event info cells to edit the info.
	⧉	Copies the event setting to other **camera(s)**.
	Event Name	Delivers the event type. ▸ Four types are available:**No enough days for retention days, Motion started,** and **Connection lost.**
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Stop action after __ Sec.
	Sec.	Sets when to stop the action launched by the **Camera** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action list	Delivers all the actions set up for the **Camera** to take when the event occurs.

Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
	✎	Edits the selected **schedule**. ▸ Click a **schedule** to select it.
	↑	Moves the selected **schedule priority** up. ▸ Click a **schedule** to select it.
	↓	Moves the selected **schedule priority** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to other event(s) from this camera.
	Schedule Name	Delivers the name of the schedule. ▸ Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **Camera** to take when the event occurs.
	+	Adds an action for the **Recording Server** to take when the event occurs.
	−	Deletes the selected action. ▸ Click an action to select it.
Action properties		Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Sets which associated camera to go to the "preset point" (for **Go to Preset**). ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) ▸ No detail setting for Video Edge Display(for **Video Edge Display**) ▸ Sets which camera to popup on which monitor(for **Video Popup**) This group of settings is available only when any of the available actions is added.

10.1.2.10.4. Configure A DI/DO of Camera

To configure the digital input/output pins and the event & action for a Video Device:

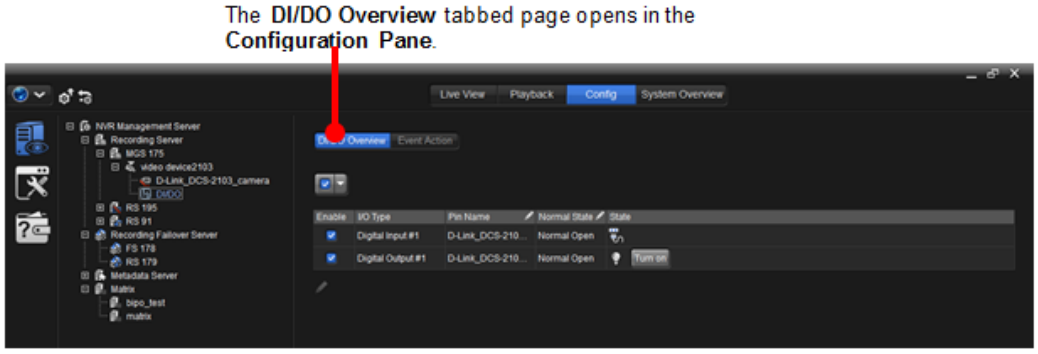
1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **DI/DO** to configure belongs.

4. If a plus sign (+) shows besides the **Video Device**, click the plus sign (+) to collapse all the existing **digital input/output**. Then click the **digital input/output** to configure.

   OR

   If a minus sign (-) shows besides the **Video Device**, the existing **camera(s)** collapse already. Simply click the **camera** to configure.

   The **DI/DO Overview** tabbed page opens in the **Configuration Pane** for the **digital input/output** to configure while the **Event Action** tabbed page is hidden by default.



An overview of the featured tabbed pages:

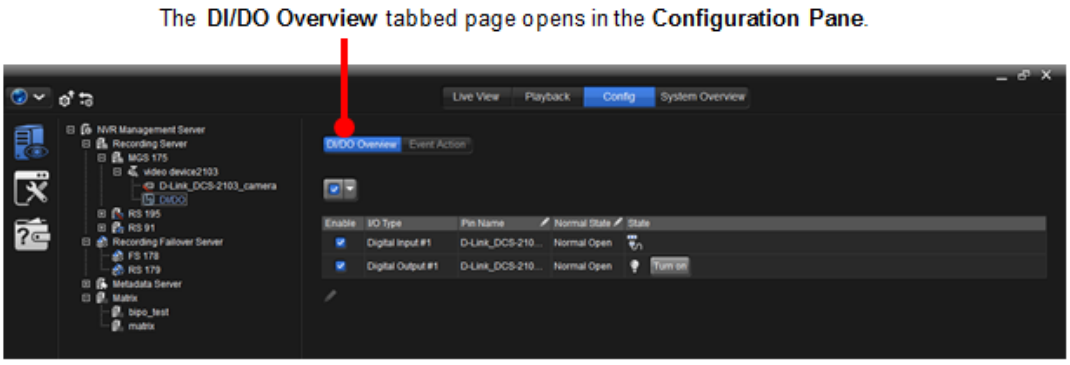
Tabbed Page	Description
DI/DO Overview	Enables/disables the digital input/output pin. Configures the name, type and state for the digital input/output pins..
Event Action	Enable/disable the event(s) that will launch action(s) from the **digital input/output**, which is when the input signal is on.

10.1.2.10.4.1. DI/DO Overview

It relies on the **DI/DO Overview** tabbed page to configure the **digital input/output** for a **Video Device**:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **DI/DO** to configure belongs.

The **DI/DO Overview** tabbed page opens in the **Configuration Pane** for the **digital input/output** to configure by default.



The featured settings are:

Setting	Description	Default
	Enables/disables the **digital input/output pins**. ▸ Select **All** to enable all device(s) ▸ Select **None** to disable all devices ▸ Select **Invert** to reverse the selection.	**All** (All **digital input/output pins** are enabled.)
Enable	Enables/disables the **digital input/output pin**.	Enabled
IO Type	Delivers what the pin does, digital input or digital output. ▸ Click the **IO Type** cell of an **digital input/output pin** to view the pin's **Associated Camera(s)**, or to associate a camera with the **digital input/output pin**.	--
Pin Name	Delivers the name of the input/output pin. ▸ Click the **Pin Name** cell to edit the name of the **digital input/output pin**.	--
Normal State	Delivers whether the **digital input/output pin** is normally open or normally close.	--
State	Delivers the current state of the **IO device**. ▸ for digital input ▸ for digital output and can be turned off	

10.1.2.10.4.2 Event Action

It relies on the **Event Action** tabbed page to enable/disable the event(s) that will launch action(s) from the **digital input/output pin**, which is when the input signal is

on.

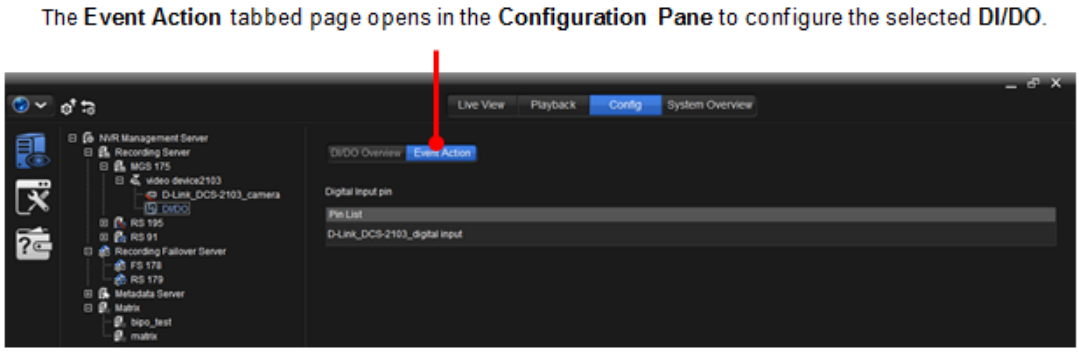
To access the **Event Action** tabbed page for a **digital input/output pin**:

1. From the **Tree Console**, click the topic **Recording Server**.
2. Click the topic **Video Device**.
3. Click the **Video Device** to which the **DI/DO** to configure belongs.

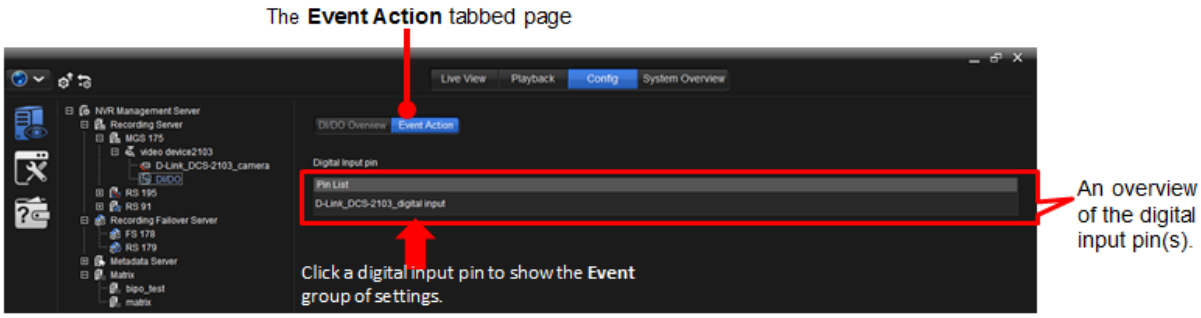
   The **DI/DO Overview** tabbed page opens in the **Configuration Pane** for the **digital input/output** to configure by default.

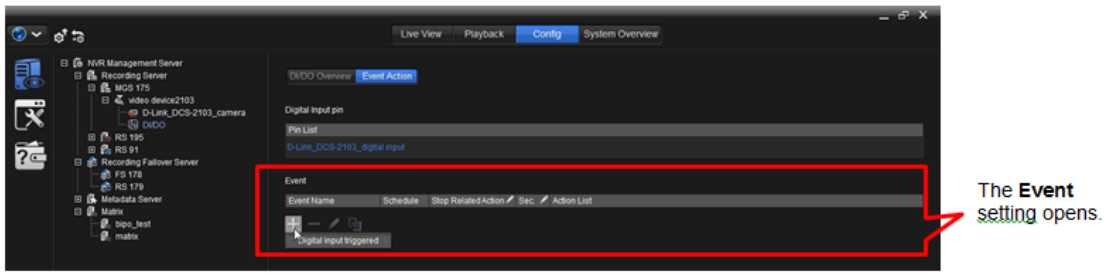
4. Click the **Event Action** tab.

   The **Event Action** tabbed page then opens.



Take a closer look at the user interface. The **Event Action** tabbed page shows an overview of the available **digital input** pin(s) at the top. And the **event** settings are in the following. Click a listed **digital input pin** to show the **Event** group of settings.





The **Event** settings are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ The available event is **Digital input triggered**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
	✎	Edits the selected event. ▸ Click any of the event info cells to edit the info.
		Copies the event setting to another **Digital input**.
	Event Name	Delivers the event type. ▸ Only one type is available: **Digital input triggered**.
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Sets whether to stop the action launched by the **digital input pin** sometime after the event occurs or leaves it on automatic.
	Sec.	Sets when to stop the action launched by the **digital input pin** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action list	Delivers all the actions set up for the **digital input pin** to take when the event occurs.
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
	✎	Edits the selected **schedule**. ▸ Click a **schedule** to select it.
	↑	Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
	↓	Moves the selected **schedule** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	Delivers the name of the schedule. ▸ Click the **Schedule name** cell to change the **schedule** to some other **schedule**.

	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **IO device** to take when the event occurs.
	+	Adds an action for the **IO device** to take when the event occurs.
	−	Deletes the selected action. ▸ Click an action to select it.
Action properties		Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Sets which associated camera to go to the "preset point" (for **Go to Preset**). ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) ▸ No detail setting for Video Edge Display(for **Video Edge Display**) ▸ Sets which camera to popup on which monitor(for **Video Popup**) This group of settings is available only when any of the available actions is added.

10.1.2.11. Configure An IO Device

To configure an **IO Device**:

1. From the **Tree Console**, click the topic **Recording Server**.

2. Click the **Recording Server** to which the **IO device** to configure belongs.

   The **IO device** to configure becomes highlighted and the **Properties** tabbed page opens in the **Configuration Pane** while the **DI/DO Overview** and **Event Action** tabbed pages are hidden by default.

   See Properties for the settings featured on the **Properties** tabbed page.
   See DI/DO Overview for the settings featured on the **DI/DO Overview** page.
   See Event Action for the settings featured on the **Event Action** tabbed page.

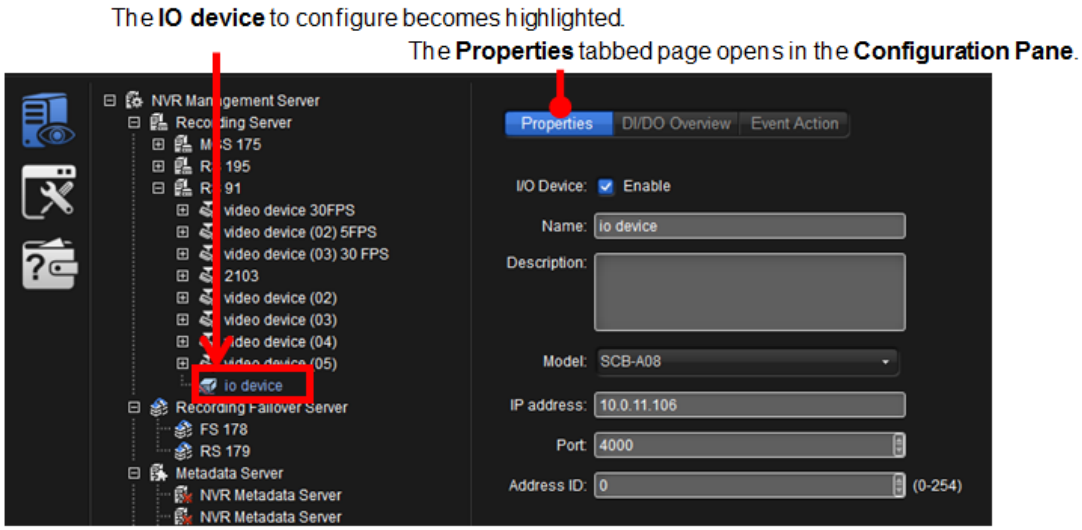
10.1.2.11.1. Properties

It relies on the **Properties** tabbed page to configure the properties of an **IO device**:

1. From the **Tree Console**, click the topic **Recording Server**.

2. Click the **Recording Server** to which the **IO device** to configure belongs.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **IO device** to configure by default.



The featured settings on the **Properties** tabbed page are:

Group	Description	Default
IO Device Enable	Enables/disables the **IO device**.	Selected (Enabled)
Name	Sets the name of the **IO device**.	"IO Device #"
Description	Provides a brief description of the **IO device** for the better identification of it.	--
Model	Sets the model of the **IO device**.	--
IP address	Sets the IP address of the **IO device**.	--
Port	Sets the port of the **IO device**. ▸ 0~65535 are configurable.	--
Address ID	Sets the address ID of the **IO device**. ▸ 0~255 are configurable.	0

10.1.2.11.2. DI/DO Overview

It relies on the **DI/DO Overview** tabbed page to configure the digital input/output for an **IO device**:

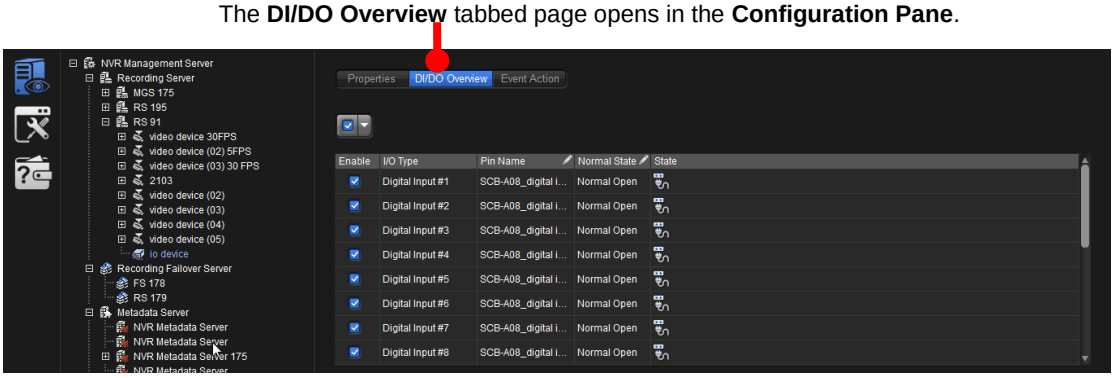
1. From the **Tree Console**, click the topic **Recording Server**.

2. Click the **Recording Server** to which the **IO device** to configure belongs.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **IO device** to configure by default.

3. Click the **DI/DO Overview** tab.
   The **DI/DO Overview** tabbed page then opens.

The **DI/DO Overview** tabbed page opens in the **Configuration Pane**.



The featured settings on the **DI/DO Overview** tabbed page are:

Group	Description	Default
	Enables/disables the **IO device**. ▸ Select **All** to enable all device(s) ▸ Select **None** to disable all devices ▸ Select **Invert** to reverse the selection.	**All** (All **IO devices** are enabled.)
Enable	Enables/disables the **IO device**.	Enabled
IO Type	Delivers what the **IO device** does, digital input or digital output. ▸ Click the **IO Type** cell of an **IO device** to view the **IO device**'s **Associated Camera(s)**, or to associate a camera with the **IO device**.	--
Pin Name	Delivers the name of the input/output pin of the **IO device**. ▸ Click the **Pin Name** cell of an **IO device** to edit the pin name for the **IO device**.	--
Normal State	Delivers whether the **IO device** is normal open or normal close.	--

State	Delivers the current state of the **IO device**. for DI for DO and can set turn off	

10.1.2.11.3. Event Action

It relies on the **Event Action** tabbed page to enable/disable the event(s) that will launch action(s) from the **IO device**, which is when the input signal is on.

To access the **Event Action** tabbed page for the **IO device**:

1. From the **Tree Console**, click the topic **Recording Server**.

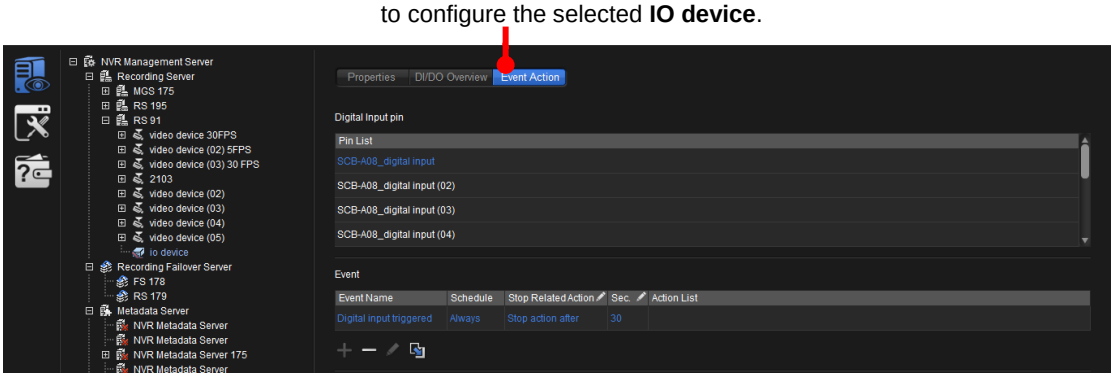
2. Click the **Recording Server** to which the **IO device** to configure belongs.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

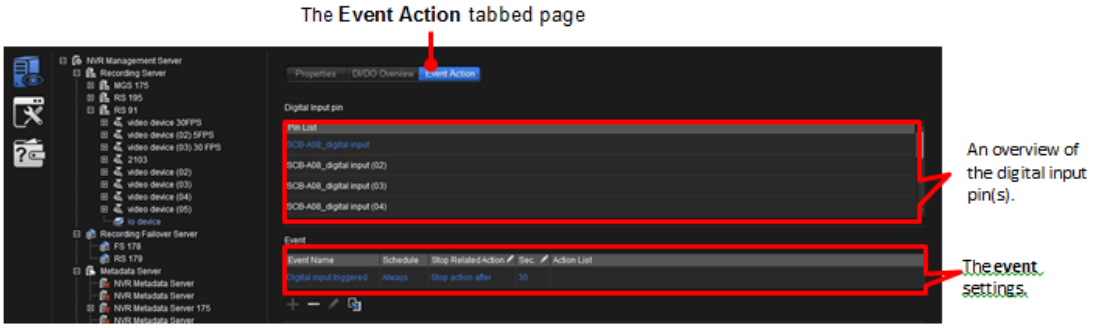
3. Click the **Event Action** tab.

   The **Event Action** tabbed page then opens.

The **Event Action** tabbed page opens in the **Configuration Pane** to configure the selected **IO device**.



Take a closer look at the user interface. The **Event Action** tabbed page shows an overview of the available **digital input** pin(s) at the top and the **event** settings in the following.



The **event** settings are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ The available event is **Input signal on**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
	✎	Edits the selected event. ▸ Click any of the event info cells to edit the info.
	⧉	Copies the event setting to another **digital input pin**.
	Event Name	Delivers the event type. ▸ Only one type is available: **Input signal on**.
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Sets whether to stop the action launched by the **IO device** some time after the event occurs or leaves it on automatic.
	Sec.	Sets when to stop the action launched by the **IO device** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action list	Delivers all the actions set up for the **IO device** to take when the event occurs.

Group	Icon / Setting	Description
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
	✎	Edits the selected **schedule**. ▸ Click a **schedule** to select it.
	↑	Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
	↓	Moves the selected **schedule** down. ▸ Click a **schedule** to select it.

		Opens a schedule overview dialog that shows the applied schedule(s) in an daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	Delivers the name of the schedule. ▸ Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **IO device** to take when the event occurs.
	+	Adds an action for the **IO device** to take when the event occurs.
	−	Deletes the selected action. ▸ Click an action to select it.
Action properties		Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Sets which associated camera to go to the "preset point" (for **Go to Preset**). ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) ▸ No detail setting for Video Edge Display(for **Video Edge Display**) ▸ Sets which camera to popup on which monitor(for **Video Popup**) This group of settings is available only when any of the available actions is added.

10.1.3. Configure Recording Failover Server

A **Recording Failover Server** is a server right under the control of the Management Server to fail over Recording Server in the same **Recording Failover Server Group** when the Recording Servers is disconnected with Management Server.

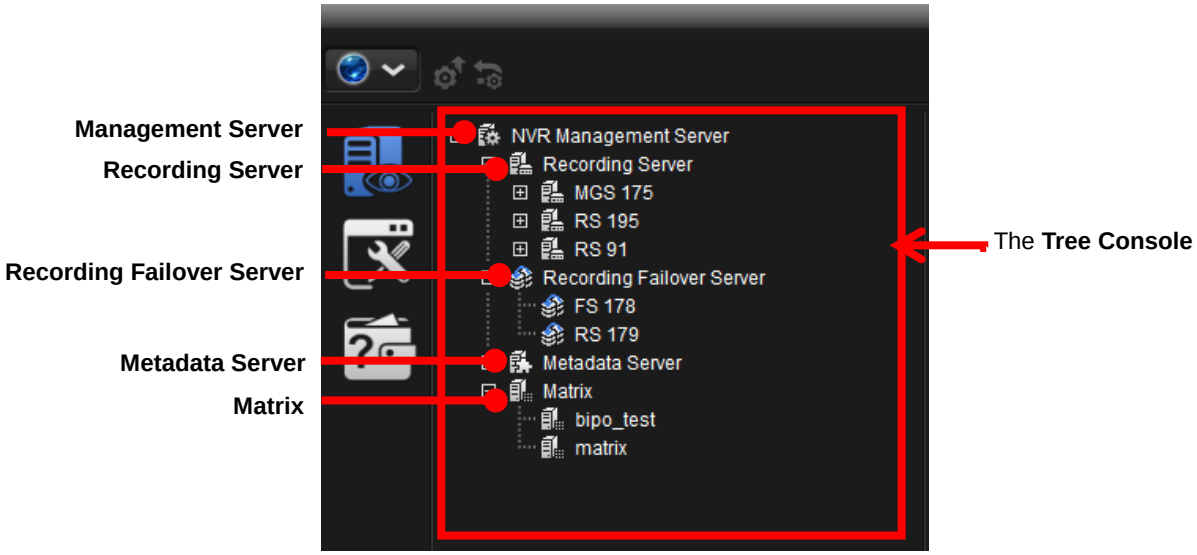
There are two service types of **Recording Server**: **recording** and **failover**. When choosing **failover** type on **Recording Server** Properties, the server will become **Recording Failover Server**.

Once choose **Failover** mode, the server will be moved to **Recording Failover Server** category on Tree list.

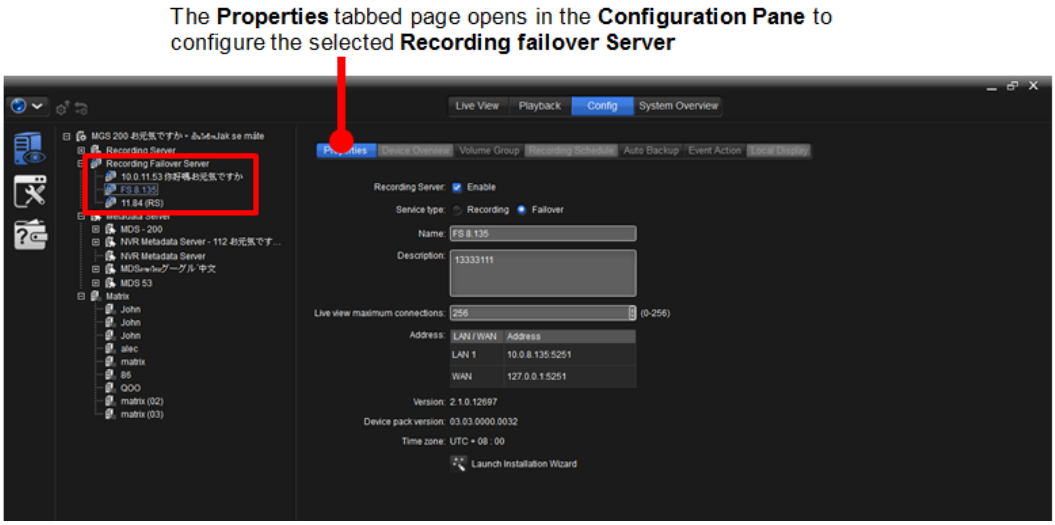
To access the setting of a **Recording Failover Server**:

1. Access the **Physical Config** as described in Physical Config (Management Server).

   The physical configuration opens onscreen, and the **Tree Console** shows the topics: **Management Server, Recording Server, Recording Failover Server**, **Metadata Server**, and **Matrix**.



   The **Properties** tabbed page then opens at the **Configuration Pane** to configure the selected **Recording Failover Server**.


The Properties tabbed page opens in the Configuration Pane to configure the selected Recording failover Server
Live View
Playback
Config
System Overview

2. Access one of these tabbed pages to configure the **Recording Failover Server**.

A function overview of these tabbed pages:

Tab	Description
Properties	1. Enables/disables the **Recording Server**. 2. Choose the service type of the Recording Server, including **Recording** and **Failover**. Once choose **Failover** mode, the server will be moved to Recording Failover Server category on Tree list. 3. Enters a brief description of the **Recording Server** for the better identification of it. 4. Launches an application to detect and install the available cameras within the network. ▸ See Properties for the settings.
Volume Group	Allocates the RAID disk volume for a camera to save the recorded videos to. * It is suggest to assign more or the same number of Volume Groups as the Recording Server in the same Volume Group to ensure the system has the same throughput when recording failover starts. ▸ Video recording requires a volume. ▸ For RAID setting please go to RAID and File System
Auto Backup	Manages the backup for the videos recorded of the Recording Failover Server on the selected period. ▸ The **Auto Backup** requires two major settings, one is the backup schedule and the other is FTP server setting.
Event Action	Sets the events to alarm for the **Recording Failover Server**.

10.1.3.1. Properties

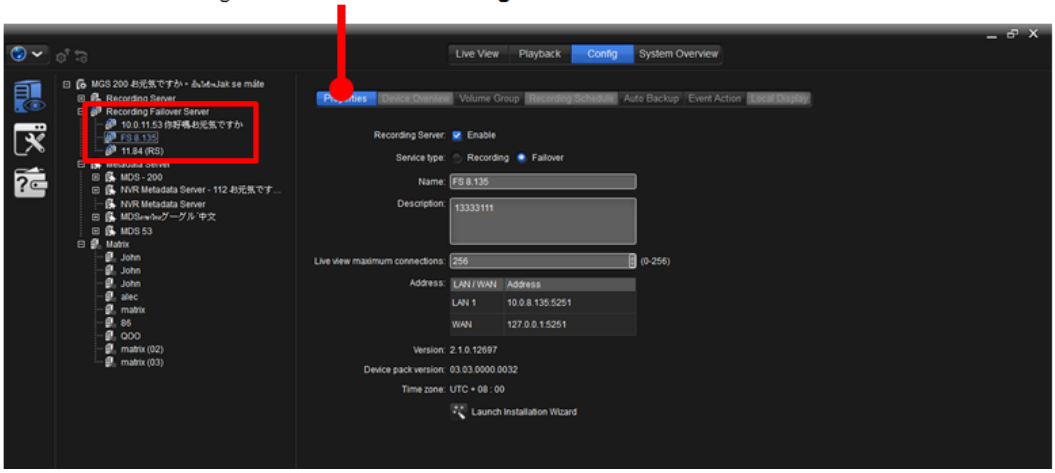
It relies on the **Properties** tabbed page to enter the information about the **Recording Failover Server** including the name and description, or to launch the Installation Wizard.

To access the **Properties** tabbed page of the **Recording Failover Server** to configure:

1. From the **Tree Console**, click the topic **Recording Failover Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

The **Properties** tabbed page opens in the **Configuration Pane** to configure the selected **Recording failover Server**



The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Enable	Enables/disables the Recording Failover Server.	Selected (Enabled)
Service Type	Choose the service type of the Recording Failover Server, including Recording and Failover. Once choose **Failover** mode, the server will be moved to Recording Failover Server category on Tree list.	Recording
Name	Names the **Recording Failover Server**.	
Description	Provides a brief description for this **Recording Failover Server** for the easier identification of it.	
Address	Delivers the following addresses: **Setting** / **Description** LAN1: Delivers the server's LAN port 1's currently networked IP address. ▸ If the LAN port isn't in use, the networking status isn't available. LAN 2: Delivers the server's LAN port 2's currently networked IP address. ▸ If the LAN port isn't in use, the networking status isn't available. WAN: Delivers the server's WAN address. ▸ If the WAN isn't in use, the networking status isn't available.	
Version	The version of Recording Failover Server	--
Device pack version	The version of Device Pack	
Time zone	The time zone of Recording Failover Server	
Launch Installation Wizard	Launches an application to detect and configure Crystal within the network.	--

10.1.3.2. Volume Group

It relies on the **Volume Group** tabbed page to allocate the RAID disk volume for a camera to save the recorded videos to. The volume is required for video recording.

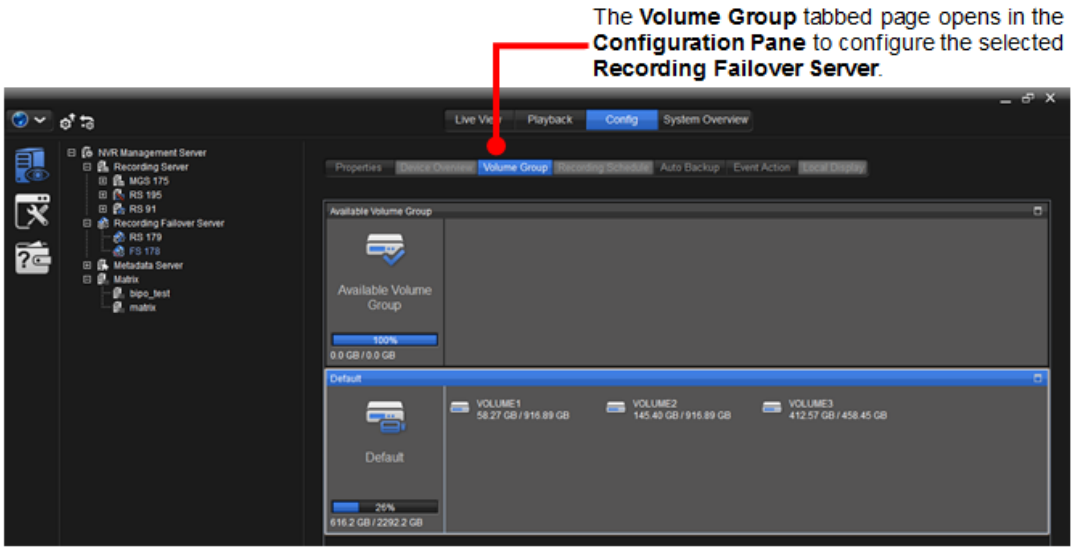
To access the **Volume Group** tabbed page that configures the **Recording Failover Server**:

1. From the **Tree Console**, click the topic **Recording Failover Server**.

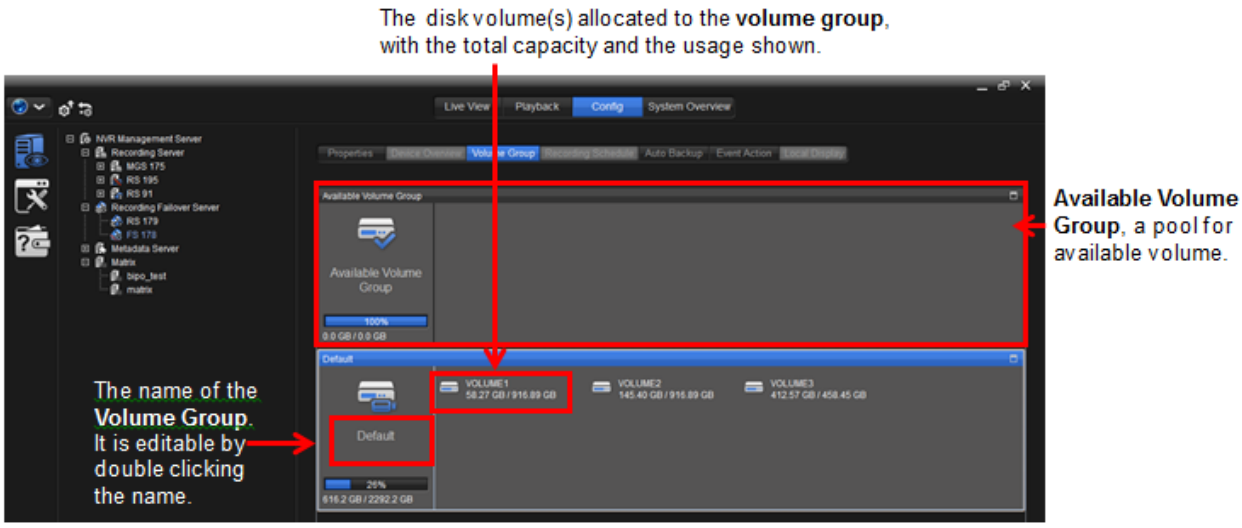
   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Volume Group** tab.

   The **Volume Group** tabbed page then opens.



Take a closer look at the user interface. The **Volume Group** tabbed page actually shows all the existing **volume group(s)**, with the info about the allocated volume(s).


The disk volume(s) allocated to the volume group, with the total capacity and the usage shown.
Available Volume Group, a pool for available volume.
The name of the Volume Group. It is editable by double clicking the name.

On Recording Failover Server, video devices won't display on Volume Group. When failover happens, the target Recording Server video devices will shows in the Volume Group according to the Volume Group settings from the Recording Server.
If there are fewer Volume Groups in the Recording Failover Server, the video devices will be distributed to different Volume Group when failover happens.

The featured settings and icons are:

Setting / Item	Name	Description
+	Adds a new Volume Group	-
−	Deletes a Volume Group	-
✎	Edits the name of selected Volume Group.	-
Available Volume Group	Available Volume Group	Available volume pool for new volumes added to the system. ▸ All new added volumes in the Recording Failover Server will be assigned to Available Volume Group. ▸ Volumes on Available Volume Group will not record when failover happens.
Default Volume Group	Default Volume Group	The pre-created Volume Group in the Recording Failover Server.
	Volume for Video Recording	Volumes assigned to Volume Group can be used to store video data.

	Please set up more or the same number of Volume Group in Recording Failover Server than the target Recording Server to ensure the recording performance when failover start.
	Remember to assign volumes from Available Volume Group to Volume Groups for all Recording Server and Recording Failover Server to start record.
	After all recording failover configuration, please operate **Simulation** on Recording Failover Group to ensure all settings are correct.

10.1.3.3. Auto Backup

It relies on the **Auto Backup** tabbed page to auto back up the videos recorded by Recording Failover Server on the previous day to a FTP server. For such auto backup, it requires the backup schedule setting and the FTP server setting.

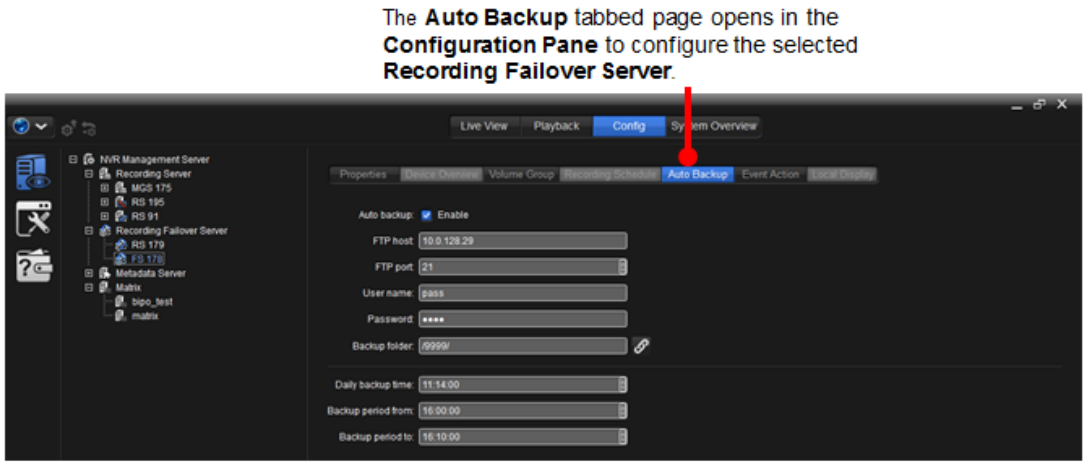
To access the **Auto Backup** tabbed page that configures the **Recording Failover Server**:

1. From the **Tree Console**, click the topic **Recording Failover Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Auto Backup** tab.

   The **Auto Backup** tabbed page then opens.



The featured settings on the **Auto Backup** tabbed page are:

Group	Setting	Description	Default
Auto backup:	☑ Enable	Enables/disables the **auto backup** feature for the **Recording Failover Server**.	Disabled
FTP server setting	**FTP host**	Sets the IP address or server name of the backup FTP server.	--
	FTP port	Sets the port number of the backup server.	--
	Username	Enters the username to log in the backup FTP server.	--
	Password	Enters the password to log in the backup FTP server.	--
	Backup folder	Specifies the folder to save the backup data to. ▸ The folder name should be the format of "Folder Name", "Folder Name/Sub Folder Name" and so on.	
	🔗	Runs a connection test to the configured FTP server.	--
Backup schedule setting	**Daily backup time**	Sets the daily time for the system to do the auto backup.	0:00:00
	Backup period from	Sets the start time of recorded video of the previous day.	0:00:00
	Backup period to	Sets the end time of recorded video of the previous day.	23:59:59
	Cameras	Sets the channel(s) to back up the videos for.	Deselected.

10.1.3.4. Event Action

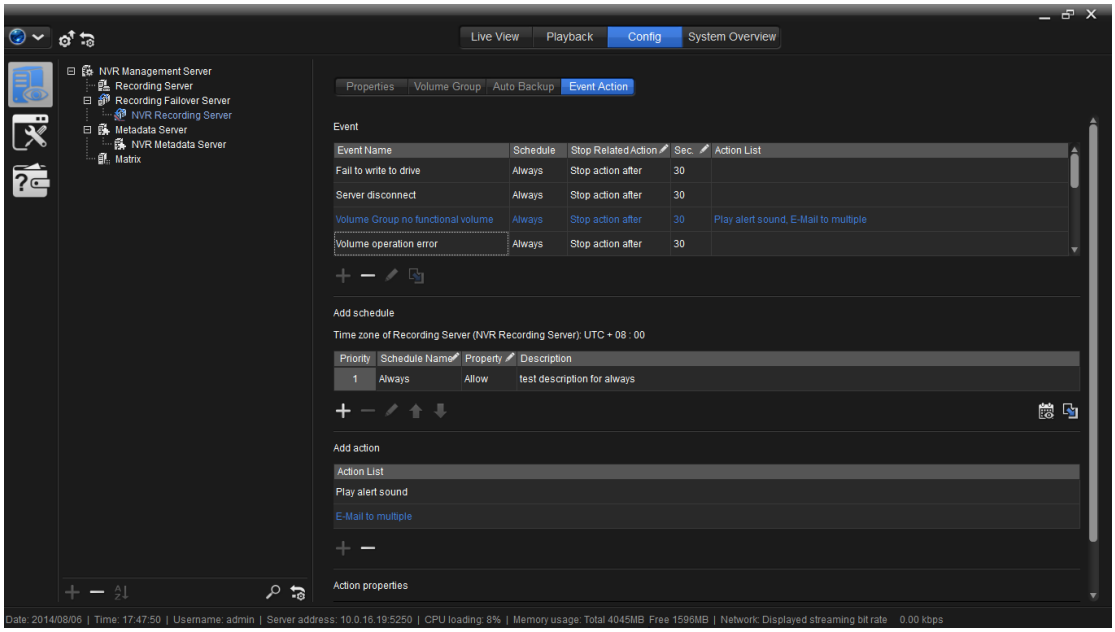
Recording Failover Server will inherit the event action settings from target **Recording Server**, but there are some specific event action belonging to the **Recording Failover Server** itself.
It relies on the **Event Action** tabbed page to enable/disable the event(s) that will launch action(s) from the **Recording Failover Server**.

To access the **Event Action** tabbed page for the **Recording Failover Server**:

1. From the **Tree Console**, click the topic **Recording Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Event Action** tab.
   The **Event Action** tabbed page then opens.



The featured settings on the **Event Action** tabbed page are:

Group	Icon / Setting	Description
Event	+	Adds an event.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
	✎	Edits the selected event. ▸ Click any of the event info cells to edit the info.
		Copies the event setting to another **device**.
	Event Name	Delivers the event type. ▸ Available event type: ▸ Fail to write to drive ▸ Server disconnect ▸ Volume group no functional volume ▸ Volume operation error ▸ Recording module error ▸ Auto backup fail ▸ Recording Failover started ▸ Recording Failover stopped
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Stop action after __ Sec.
	Sec.	Sets when to stop the action launched by the **Recording Failover Server** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action list	Delivers all the actions set up for the **Recording Failover Server** to take when the event occurs.
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.

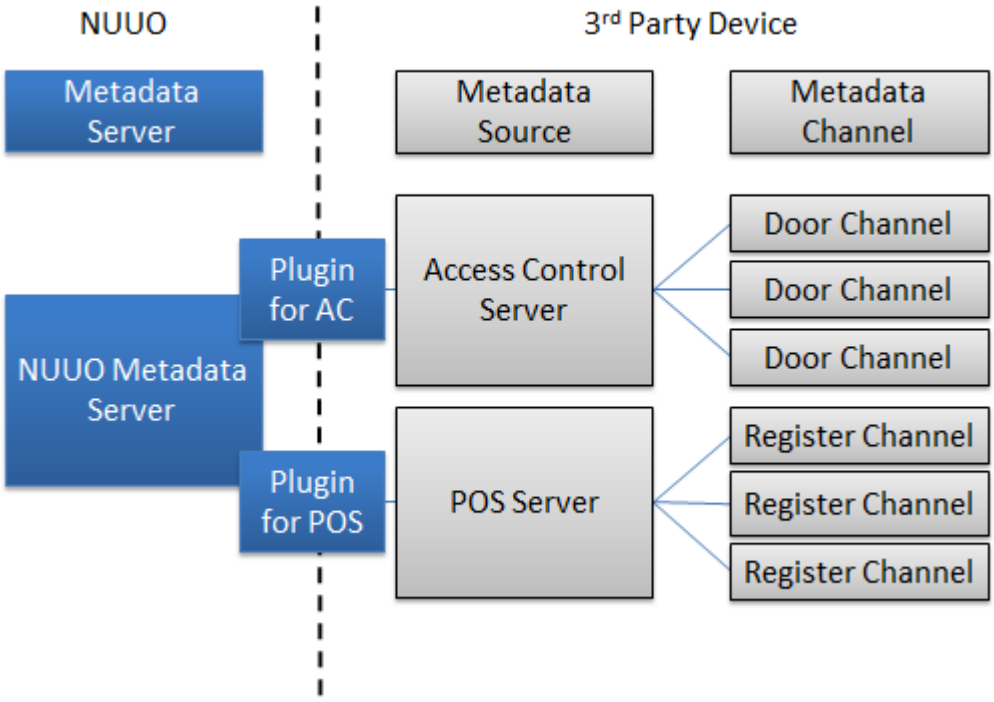
		Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
		Edits the selected **schedule**. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	Delivers the name of the schedule. ▸ Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **Recording Failover Server** to take when the event occurs.
		Adds an action for the **assigned event** to take when the event occurs.
		Deletes the selected action. ▸ Click an action to select it.
Action properties		Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Play alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) This group of settings is available only when any of the available actions is added.

10.1.4 Configure Metadata Server

A **Metadata Server** is the server to host third-party device servers and archive their data. The "plugin" is a module for each of the custom integrations working with the **Metadata Server** to make the **Metadata Server** capable of exchanging data with the third-party Metadata source through a "Metadata channel".

This allows faster development cycles from field requests to a finished tested product. When integrated with 3rd party products like POS and access control products, which are used as Metadata sources by the NUUO Metadata structure, the NUUO platform becomes a seamless interface allowing intelligent search and data filtering for monitoring and handling events. Data is supplied to the Metadata source via

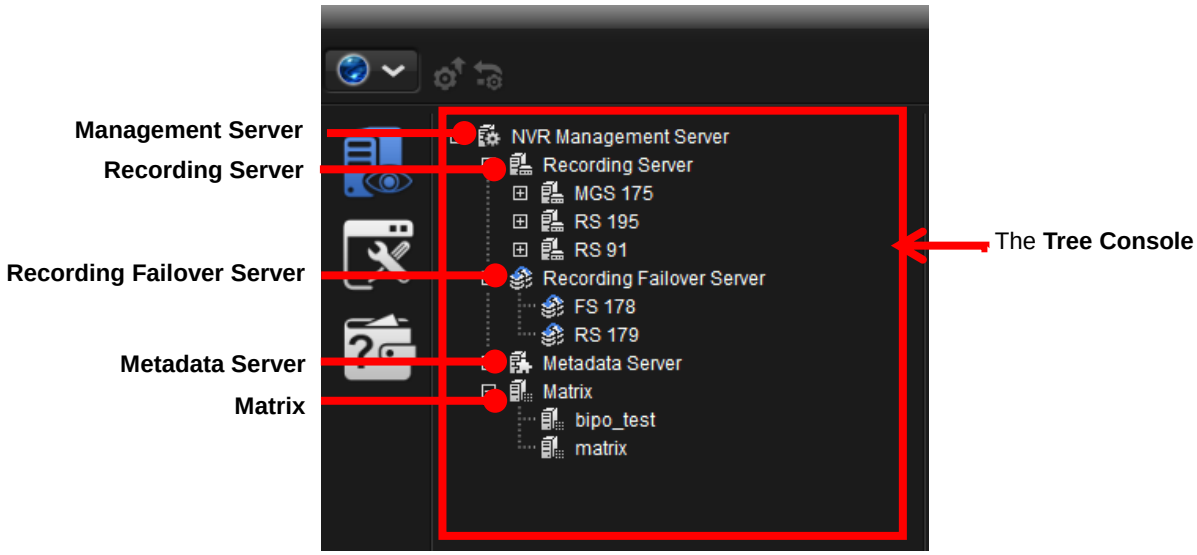
Metadata channels. For example: the Door channels supply the Access Control Server and the Register channels supply the POS Server. Through the Metadata Plugin, users can manage metadata by recording real time information in databases which describe events that link to video. The **Metadata Server** integrates third party data and video in a unified management platform. NUUO provides different plugin modules for 3rd party products to meet your needs.



To access the setting of a **Metadata Server**:

1. Access the **Physical Config** (“physical configuration”) as described in Physical Config (Management Server).

   The physical configuration opens onscreen, and the **Tree Console** shows the topics: **Management Server, Recording Server, Recording Failover Server**, **Metadata Server**, and **Matrix**.



2. If a plus sign (+) shows besides the sub topic **Metadata Server**, click the plus sign (+) to collapse the existing **Metadata Server**(**s**). Then click the **Metadata Server** to configure.

   OR

   If a minus sign (-) shows besides the sub topic **Metadata Server**, the existing **Metadata Server**(**s**) collapse already. Simply click the Metadata Server to configure.

   The **Properties** tabbed page then opens at the **Configuration Pane** to configure the selected **Metadata Server** while the other five tabbed pages are hidden.

3. Access one of these tabbed pages to configure the **Metadata Server**.

A function overview of these tabbed pages:

Setting	Description
Properties	1. Enables/disables the **Metadata Server**. 2. Enters a brief description of the **Metadata Server** for the better identification of it. 3. Launches an application to detect and install the available 3rd-party device servers within the network. ▸ See Properties for the settings.
Plugin Overview	Delivers an overview of all the "plugins", a piece of software, which enables the data exchange between the **Metadata Server** and the third-party device server through a "metadata channel" ▸ A third-party device server is connected to the **Metadata Server** as a "metadata source".
Source Overview	Delivers an overview of all the third-party device servers, i.e. "metadata sources", that

	are connected to the **Metadata Server**.
Event Action	Sets the event(s) that will launch action(s) from the **Metadata Server**.

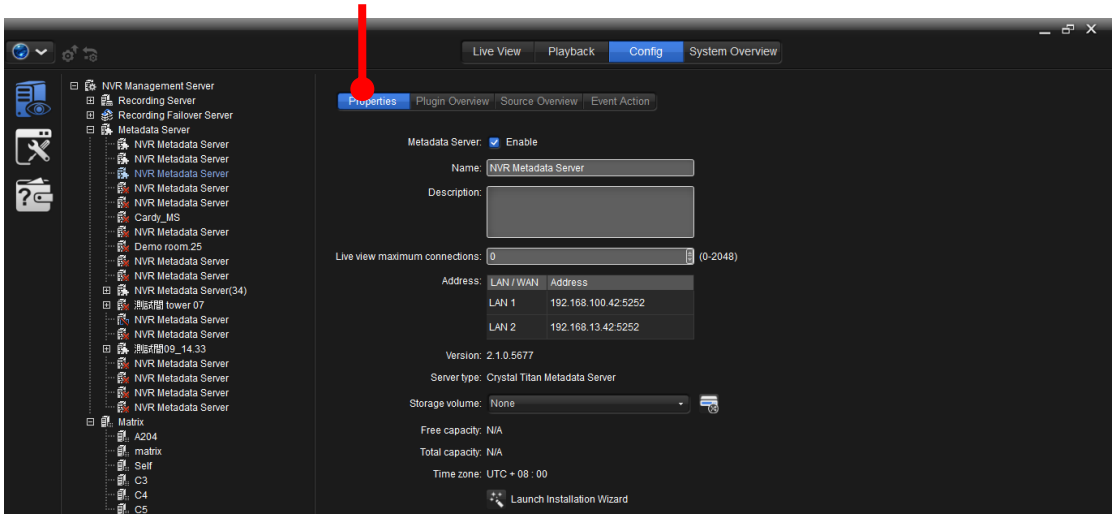
10.1.4.1. Properties

It relies on the **Properties** tabbed page to configure the properties of a **Metadata Server**:

1. From the **Tree Console**, click the topic **Metadata Server**.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **Metadata Server** to configure while the other tabbed page is hidden by default.

The **Properties** tabbed page opens in the **Configuration Pane**.



The featured settings on the **Properties** tabbed page are:

Group	Description	Default
Metadata Server Enable	Enables/disables the **Metadata Server**.	Selected (Enabled)
Name	Sets the name of the **Metadata Server**.	"Metadata Server #"
Description	Provides a brief description of the **Metadata Server** for the better identification of it.	--
Address	Delivers the following addresses: **Setting** / **Description** LAN1: Delivers the server's LAN port 1's currently networked IP address. ▸ If the LAN port isn't in use, the networking	--

		status isn't available.	
	LAN 2	Delivers the server's LAN port 2's currently networked IP address. ▸ If the LAN port isn't in use, the networking status isn't available.	
	WAN	Delivers the server's WAN address. ▸ If the WAN isn't in use, the networking status isn't available.	
Launch Installation Wizard	Launches an application to detect and install the available Metadata Server(s), i.e. the "Metadata Server", within the network.		--
Server type	Delivers the type of the **Metadata Server**.		
Storage volume	Assigns a disk volume for the **Metadata Server** for storage. ▸ Click the icon to open the **Recording Server**'s **Volume Group** tabbed page to release a disk volume to **free volume group**.		Volume 1
Free capacity	Delivers the free disk space of the disk volume selected in **Storage volume** setting.		--
Total capacity	Delivers the total disk space of the disk volume selected in **Storage volume** setting.		--

	Metadata Server and Recording Server cannot share the same volume group due to performance issue.

10.1.4.2. Plugin Overview

The "plugin" is a module for each of the custom integrations working with the **Metadata Server** to make the **Metadata Server** capable of exchanging data with the third-party Metadata source through a "Metadata channel".

The **Plugin Overview** tabbed page is featured to deliver an overview of all the "plugins" that enable the data exchange between the **Metadata Server** and the Metadata source through "Metadata channel".

To access the **Plugin Overview** tabbed page for the **Metadata Server**:

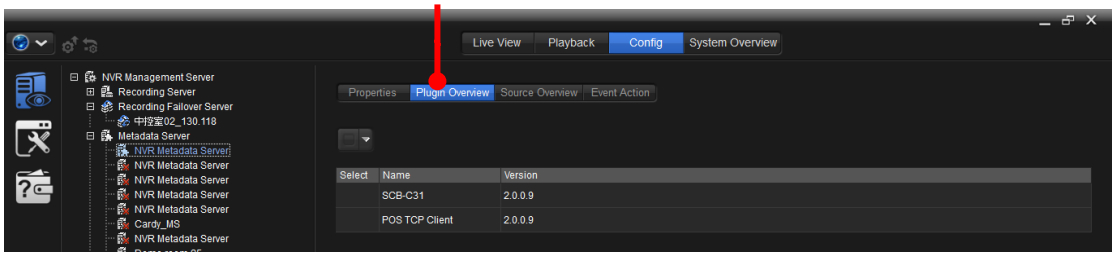
1. From the **Tree Console**, click the topic **Metadata Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Plugin Overview** tab.

The **Plugin Overview** tabbed page then opens.

The **Plugin Overview** tabbed page opens in the **Configuration Pane** to configure the selected **Metadata Server**.



The featured settings on the **Plugin Overview** tabbed page are:

Setting	Description	Default
	Select the drop-downs **All**, **None** or **Invert** to select all **plugins**, deselect all **plugins** or reverse the selection.	**Enable**
Select	Selects/deselects the **plugin**.	**Enable**
Name	Delivers the name of the **plugin**. ▸ See Properties to know how to set the name for the **plugin**.	--
Version	Delivers the software version of the **plugin**.	--

	The metadata plugin Falco default port is 5000.

10.1.4.3. Source Overview

The **Source Overview** tabbed page delivers an overview of all the “Metadata sources”, i.e. the third-party device servers, connected to the Metadata Server.

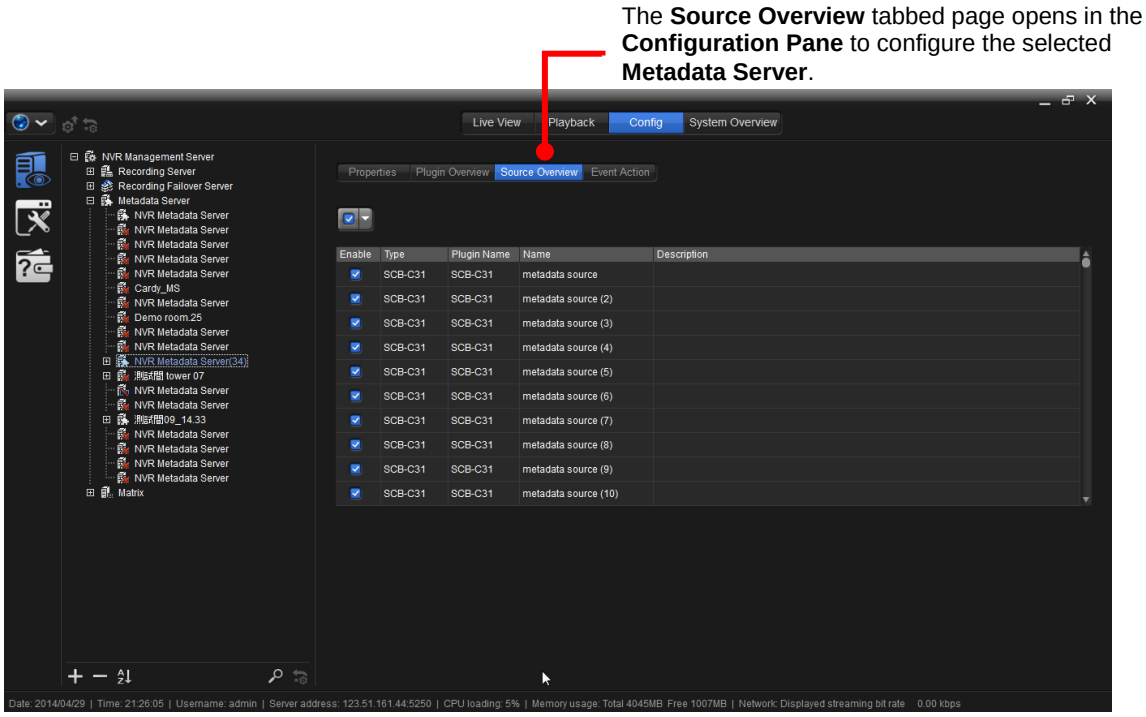
To access the **Source Overview** tabbed page for the **Metadata Server**:

1. From the **Tree Console**, click the topic **Metadata Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Source Overview** tab.

   The **Source Overview** tabbed page then opens.



The featured settings on the **Source Overview** tabbed page are:

Setting	Description	Default
	Select the drop-downs **All**, **None** or **Invert** to select all metadata sources, deselect all metadata source or reverse the selection.	All
Select	Selects/deselects the metadata source.	Selected (Enabled)
Type	Delivers the type of the metadata source, i.e. the 3rd-party device server. ▸ See also the Properties tabbed page of a **metadata source**.	--
Plugin Name	Delivers the name of the Metadata source.	
Name	Delivers the name of the Metadata channel. ▸ See also the Properties tabbed page of a **metadata channel.**	--
Description	Delivers the software version of the metadata source. ▸ See also the Properties tabbed page of a **metadata source.**	--

10.1.4.4. Event Action

It relies on the **Event Action** tabbed page to set the events that launch action(s) from the **Metadata Server**.

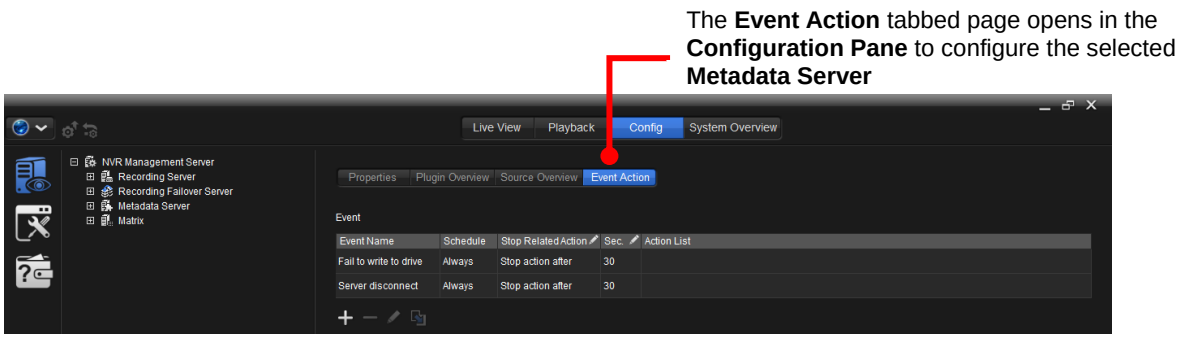
To access the **Event Action** tabbed page for the **Metadata Server**:

1. From the **Tree Console**, click the topic **Metadata Server**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Event Action** tab.

   The **Event Action** tabbed page then opens.



The featured settings are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ Available events are **Server disconnect** and **Fail to write to drive**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
		Edits the selected event. ▸ Click any of the event info cells to edit the info.
		Copies the event setting to another **Metadata Server**.
	Event Name	Delivers the event type. ▸ Two types are available: **Server disconnect** and **Fail to write to drive**.
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Stop action after __ sec.
	Sec.	Sets when to stop the action launched by the **Metadata Server** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action List	Delivers all the actions set up for the **Metadata Server** to take when the event occurs.
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.

		Edits the selected **schedule**. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	1. Delivers the name of the schedule. 2. Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **Metadata Server** to take when the event occurs. ▸ Available actions are **Email to multiple** and **Play alert sound**
		Adds an action for the **Metadata Server** to take when the event occurs. ▸ One action is available: **Email to multiple**.
		Deletes the selected action. ▸ Click an action to select it.
	Action properties	Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Sets which associated camera to go to the "preset point" (for **Go to Preset**). ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) ▸ No detail setting for Video Edge Display(for **Video Edge Display**) ▸ Sets which camera to popup on which monitor(for **Video Popup**) This group of settings is available only when any of the available actions is added.

10.1.4.5. Add A Metadata Source

To add a **metadata source**, i.e. a **POS server** or an **access control server**, to a **Metadata Server**:

1. From the **Tree Console**, click the topic **Metadata Server**.

   All the existing **Metadata Server**(**s**) collapse under the sub topic **Metadata Server**.

2. Click the **Metadata Server** to add a **metadata source** to.

   The **Metadata Server** to add a **metadata source** to becomes highlighted.

3. From the bottom of the **Tree Console**, click the add icon +.

   A tiny dialog then opens showing the options to add a metadata source.

   A new **metadata source**, named “metadata source” by default will be appended under the selected **Metadata Server**, and a **Properties** tabbed page will open in the **Configuration Pane** for users to configure the newly added **metadata source**.

To configure a **metadata source**, see Configure A metadata source.

10.1.4.6 Delete A Metadata Source

To delete a **metadata source**, i.e. a **POS server** or an **access control server**, from a **Metadata Server**:

1. From the **Tree Console**, click the topic **Metadata Server**.

   All the existing **Metadata Server**(**s**) collapse under the sub topic **Metadata Server**.

2. Find the **Metadata Server** to delete the **metadata source** from.

3. If a plus sign (+) shows besides the **Metadata Server**, click the plus sign (+) to collapse the existing **metadata source**(**s**). Then click the source to delete.

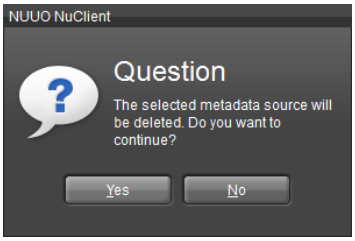
   OR

   If a minus sign (-) shows besides the **Metadata Server**, the existing **metadata source**(**s**) collapse already. Simply click the source to delete.

   The **metadata source** to delete becomes highlighted.

4. From the bottom of the **Tree Console**, click the delete icon −.

   A question dialog opens to ask for the confirmation of deletion.



5. Click **Yes** to confirm the deletion.

6. Click the **apply button** on the **Top Toolbar** to apply the change.

10.1.4.7 Configure A Metadata Source

To configure a **metadata source**:

1. From the **Tree Console**, click the topic **Metadata Server**.

   All the existing **Metadata Server**(**s**) collapses under the sub topic **Metadata Server**.

2. If a plus sign (+) shows besides the **Metadata Server** to configure, click the plus sign (+) to collapse the existing **metadata source**(**s**). Then click the **POS device** to configure.

   OR

   If a minus sign (-) shows besides the **Metadata Server** to configure, the existing **metadata source**(**s**) collapse already. Simply click the **metadata source** to configure.

   The **metadata source** to configure becomes highlighted and the **Properties** tabbed page opens in the **Configuration Pane** by default.

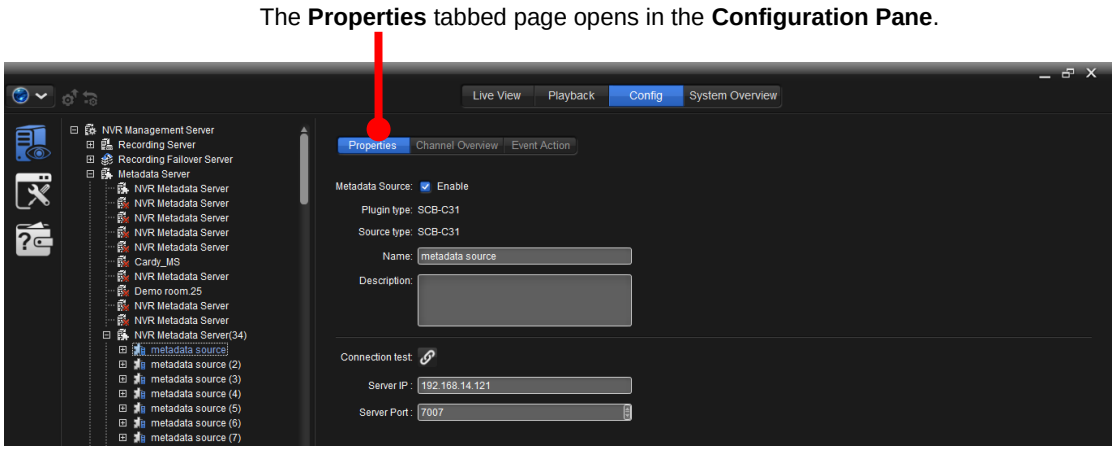
- See Properties for the settings featured on the **Properties** tabbed page.
- See Channel Overview for the settings featured on the **Channel Overview** tabbed page.
- See Event Actionfor the settings featured on the **Event Action** tabbed page.

10.1.4.7.1 Properties

It relies on the **Properties** tabbed page to configure the properties of a **metadata source**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the **Metadata Server** to which the **metadata source** to configure belongs.

The **Properties** tabbed page opens in the **Configuration Pane** for the **metadata source** to configure by default.



The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Metadata source **Enable**	Enables/disables the **metadata source.**	Selected (Enabled)
Plugin type	Delivers the type of the **plugin**. ▸ The **plugin** is a module to enable the data exchange between the **Metadata Server** and the **metadata source**	--
Source type	Delivers the type of the **metadata source**.	--

Name	Sets the name of the **metadata source**.	"metadata source #"
Description	Provides a brief description of the **metadata source** for the better identification of it.	--

10.1.4.7.2 Channel Overview

The "**channel**" means a "**metadata channel**" through which the **metadata source** streams the data to the **Metadata Server**. The **Channel Overview** tabbed page is featured for users to get a general view of such **metadata channels**.

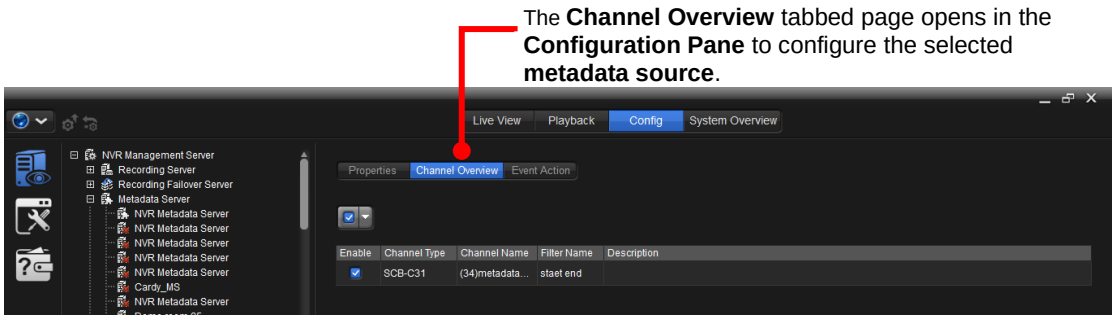
To access the **Channel Overview** tabbed page for the **metadata source**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the **Metadata Server** to which the **metadata source** to configure belongs.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **metadata source** to configure by default.

3. Click the **Channel Overview** tab.

   The **Channel Overview** tabbed page then opens.



The featured settings on the **Channel Overview** tabbed page are:

Setting	Description	Default
	Select the drop-downs **All**, **None** or **Invert** to select all **metadata channels**, deselect all **metadata channels** or reverse the selection.	--
Enable	1. Delivers whether the **metadata channel** is enabled or disabled at the moment. 2. Enables/disables the **metadata channel**.	**Enable**
Channel Type	Delivers the type of the **metadata channel**.	

Channel Name	Delivers the name of the **channel**. ▸ See also the Properties tabbed page of a **metadata channel**.	--
Filter Name	Delivers the name of the filter. ▸ See also the Filter tabbed page of a **metadata channel**.	--
Description	Deliver the description of the channel. ▸ See also the Properties tabbed page of a **metadata channel**.	--

10.1.4.7.3 Event Action

It relies on the **Event Action** tabbed page to enable/disable the event(s) that will launch action(s) from the **metadata source**, which is when the connection to the **Metadata Server** is lost.

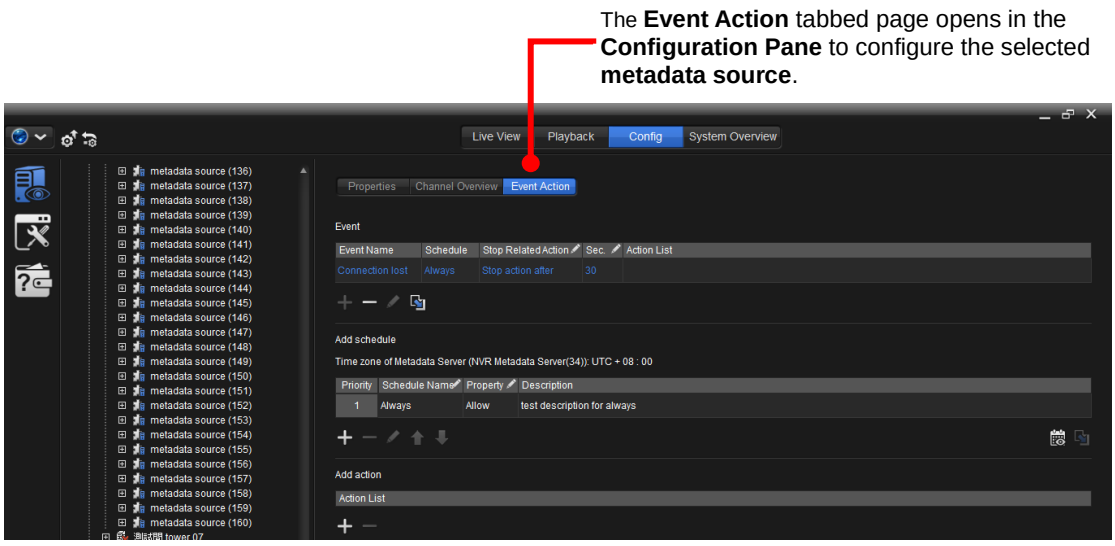
To access the **Event Action** tabbed page for the **metadata source**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the **Metadata Server** to which the **metadata source** to configure belongs.

   The **Properties** tabbed page opens in the **Configuration Pane** for the metadata source to configure by default.

3. Click the **Event action** tab.

   The **Event action** tabbed page then opens.



The featured settings on the **Event Action** tabbed page are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ The available event is **Connection lost**, which means the **metadata source** loses the connection to the **Metadata Server**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
		Edits the selected event. ▸ Click any of the event info cells to edit the info.
		Copies the event setting to another **device**.
	Event Name	Delivers the event type. ▸ Only one type is available: **Connection lost**, which means the **metadata source** loses the connection to the **Metadata Server**.
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Sets whether to stop the action launched by the **metadata source** sometime after the event occurs.
	Sec.	Sets when to stop the action launched by the **metadata source** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action list	Delivers all the actions set up for the **metadata source** to take when the event occurs.
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
		Edits the selected **schedule**. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	Delivers the name of the schedule. ▸ Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **metadata source** to take when the event occurs.
	+	Adds an action for the **metadata source** to take when the event occurs.

	−	Deletes the selected action. ▸ Click an action to select it.
Action properties		1. Sets whom to send the alert email(s) to. 2. Sets which digital output pin to turn on. 3. Sets which associated camera to go to the “preset point”. ▸ This group of settings is available only when any of the available actions is added.

10.1.4.7.4 Add A Metadata Channel

To add a **metadata channel**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the **Metadata Server** to which the **metadata source** to configure belongs.

   To add a **metadata channel** to becomes highlighted.

3. From the bottom of the **Tree Console**, click the add icon **+**.

   A tiny dialog then opens showing the options to add a metadata channel.

   A new **metadata channel**, named “metadata channel” by default will be appended under the selected **metadata source**, and a **Properties** tabbed page will open in the **Configuration Pane** for users to configure the newly added **metadata channel**.

   - To configure a **metadata channel**, see Configure A Metadata Channel.
   - To delete a **metadata channel**, see Delete A Metadata Channel.

10.1.4.7.5 Delete A Metadata Channel

To delete a **metadata channel** from a **metadata source**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the topic **metadata source**.

All the existing **metadata source**(**s**) collapse under the **Metadata Server**.

3. Find the **metadata source** to delete the **metadata channel** from.

4. If a plus sign (+) shows besides the **metadata source**, click the plus sign (+) to collapse the existing **metadata channel**(**s**). Then click the channel to delete.

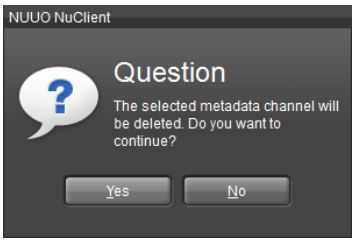
   OR

   If a minus sign (-) shows besides the **metadata source**, the existing **metadata channel**(**s**) collapse already. Simply click the channel to delete.

   The **metadata channel** to delete becomes highlighted.

5. From the bottom of the **Tree Console**, click the delete icon −.

   A question dialog opens to ask for the confirmation of deletion.



6. Click **Yes** to confirm the deletion.

7. Click the **apply button** on the **Top Toolbar** to apply the change.

10.1.4.7.6 Configure A Metadata Channel

To configure a **Metadata Channel**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the topic **metadata source**.

   All the existing **metadata source**(**s**) collapse under the **Metadata Server**.

3. If a plus sign (+) shows besides the **metadata source** (the POS device) to configure, click the plus sign (+) to collapse the existing **metadata channel**(**s**). Then click the **metadata channel** to configure.

   OR

   If a minus sign (-) shows besides the **metadata source** (the POS device) to configure, the existing **metadata channel(s)** collapse already. Simply click the **metadata channel** to configure.

   The **metadata channel** to configure becomes highlighted and the **Properties** tabbed page opens in the **Configuration Pane** while the other tabbed pages are hidden by default.

   - See Properties for the settings featured on the **Properties** tabbed page.
   - See Filter for the settings featured on the **Filter** tabbed page.
   - See Metadata Displayfor the settings featured on the **Metadata Display** tabbed page.
   - See Event Action for the settings featured on the **Event Action** tabbed page.

10.1.4.7.6.1 Properties

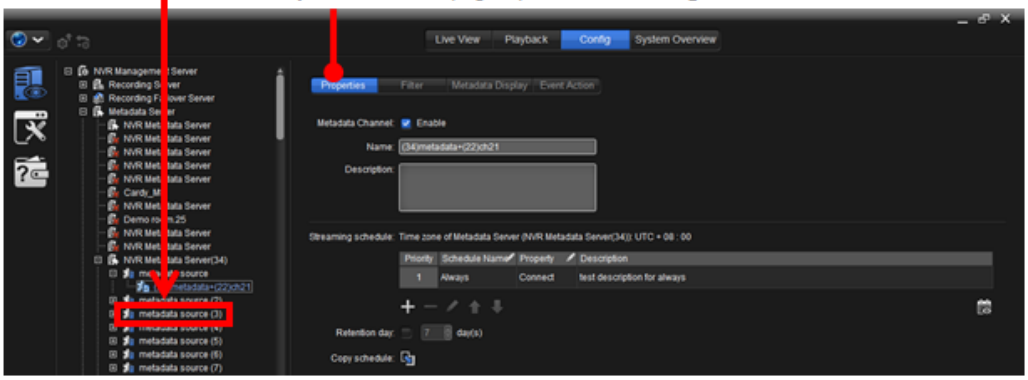
It relies on the **Properties** tabbed page to configure the properties of a **metadata channel**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the topic **metadata source**.
3. Click the **metadata source** to which the **metadata channel** to configure belongs.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **metadata channel** to configure while the other tabbed pages are hidden by default.

The metadata channel **to configure becomes highlighted.**

The **Properties** tabbed page opens in the **Configuration Pane**.



The featured settings on the **Properties** tabbed page are:

Group	Setting	Description	Default
Metadata channel ☑ Enable		Enables/disables the **metadata channel**.	Selected (Enabled)
Name		Names the **metadata channel**.	"metadata channel"
Description		Provides a brief description of the **metadata channel** for the better identification of it.	--
Streaming schedule	**Schedule Name**	1. Assigns a **schedule** (**profile**) to the **metadata channel** to define the time period(s) for the **metadata channel** to connect to the network or disconnect from the network. 2. Delivers the name of the schedule currently applied to the **register channel**.	the **Always** schedule
	Properties	Sets when to connect the **metadata channel** to the network or when to disconnect the **metadata channel** from the network.	Connect
	Description	Delivers a brief description of the **schedule** (**profile**).	the "test description"
	+	Applies another **schedule** to the **metadata channel**.	--
	−	Withdraws a **schedule** from a **metadata channel**.	--
	✎	Edits the currently applied schedule(s): 1. Replaces a currently applied schedule with another schedule. 2. Changes the schedule **Property** to **Connect** or **Disconnect**. ▸ Click the item to edit and then click the ✎ icon to make the item editable, or simply double-click the item to make it editable.)	--
	↑	Moves the selected schedule up.	--
	↓	Moves the selected schedule down.	--
	Retention day	Sets how long to keep the metadata for.	7 days

10.1.4.7.6.2 Filter

The "**Filter**" means the data filtered from a "**metadata channel**" through which the **metadata source** streams to the **Metadata Server**.

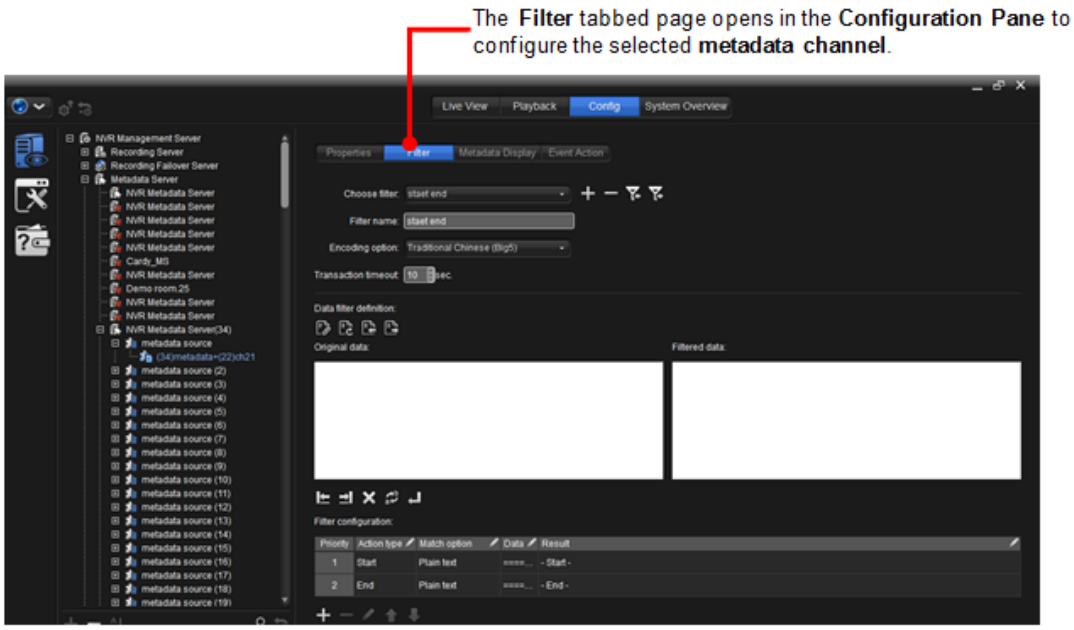
To access the **Filter** tabbed page for the **metadata channel**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the topic **metadata source**.
3. Click the **metadata source** to which the **metadata channel** to configure belongs.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **metadata channel** to configure by default.

4. Click the **Filter** tab.

   The **Filter** tabbed page then opens.



The featured settings on the **Filter** tabbed page are:

Group	Setting	Description	Default
Choose filter		Assigns a **filter** for the metadata channel. Info: Add new filter Info: Delete selected filter. Info: Import filter. Info: Export filter.	--
Filter Name		Names the **filter**.	"filter (1)"
Encoding option		Assigns an encoding option for the **filter**.	ASCII
Transaction timeout		Sets when to timeout the transaction.	10 sec.
Data filter definition		Catch data from the server	--
		Clear data	--
		Import data	--
		Export data	--
	Original data	The original data from metadata channel.	--
	Filtered data	The filtered data.	--
		set start	--

		end	--
		omit	--
		substitute	--
		change to new line	--
Filter Configuration	**Action type**	Assigns an action to the **filter**.	--
	Priority	Sets the priority for an action.	--
	Match option	Assigns a match option to the **filter**. ▸ Three types are available: Plain test, wildcard and regular expression.	--
	Data	Delivers the data be matched for the **filter**.	--
	Result	Delivers the result be matched for the **filter**.	--
		Applies another **action** to the **filter**.	--
		Withdraws an **action** from the **filter**.	--
		Edits the currently applied **filter(s)**: 1. Replaces a currently applied filter with another filter. 2. Changes the filter **Action Type, Match option, Data** and **Result**. ▸ Click the item to edit and then click the icon to make the item editable, or simply double-click the item to make it editable.)	--
		Moves the selected action up.	--
		Moves the selected action down.	--

10.1.4.7.6.3 Metadata Display

It relies on the **Metadata Display** tabbed page to set how to show the metadata onscreen.

To access the **Metadata Display** tabbed page for the **metadata channel**:

1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the topic **metadata source**.
3. Click the **metadata source** to which the **metadata channel** to configure belongs.

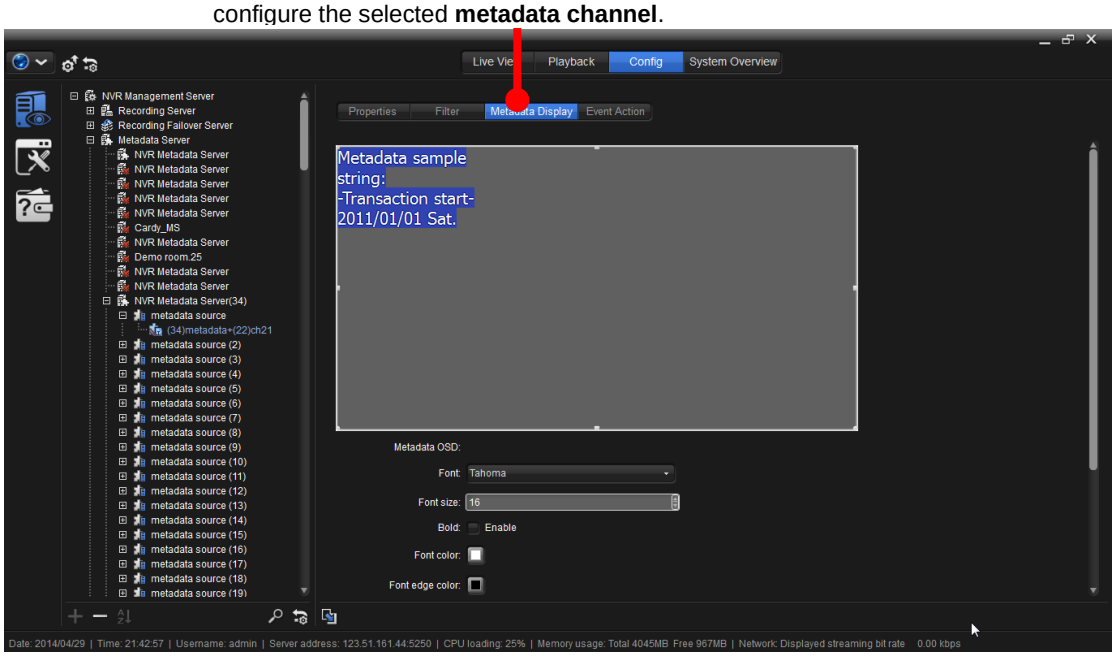
The **Properties** tabbed page opens in the **Configuration Pane** for the **metadata**

channel to configure by default.

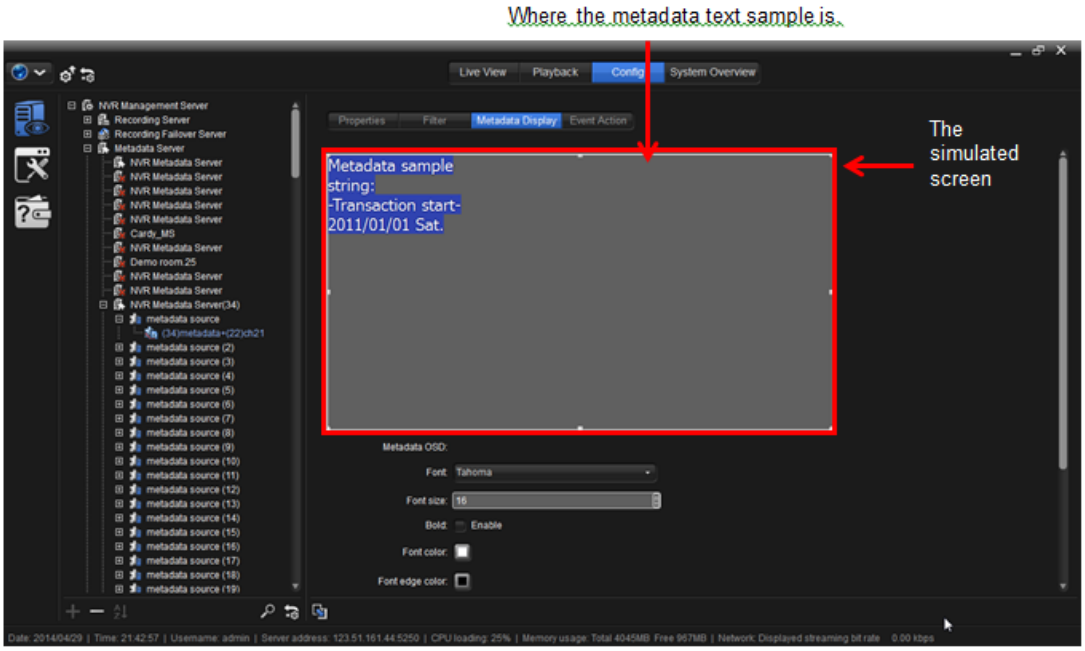
4. Click the **Metadata Display** tab.

The **Metadata Display** tabbed page then opens.

The **Metadata Display** tabbed page opens in the **Configuration Pane** to configure the selected **metadata channel**.



Take a closer look at the user interface. The **Metadata Display** tabbed page shows a screen simulation at the top to set where to show the metadata onscreen.
Click and drag the rectangle where the metadata sample text is to set the location for the metadata onscreen. And click and drag the eight nodes of the rectangle to resize the rectangle.



Other featured settings are:

Setting	Description	Default
Font	Sets the font for the onscreen metadata	Tahoma
Font size	Sets the font size for the onscreen metadata.	10
Bold	Enables/disables bold font or the onscreen metadata.	Deselected (Disabled)
Font color	Sets the font color for the onscreen metadata.	black
Font edge color	Sets the outline color for the font of the onscreen metadata.	white
Background color	Sets the border color for the onscreen metadata. ▸ Use the slide bar to adjust the transparency of the border color.	blue
Associated Camera	Associates the metadata setting with a **Video Device**.	None
Associated Camera display	Enables/disables showing the metadata with associated camera on Live view.	Selected (Enabled)
Display timeout	Enables/disables clear transaction display after __ sec. timeout, or remain transaction display until next transaction comes. ▸ Enable the timeout to be able to set the timeout in the **sec** field.	Clear transaction display after 10 sec. timeout.

10.1.4.7.6.4 Event Action

It relies on the **Event Action** tabbed page to set the events that launch action(s) from the **metadata channel**.

To access the **Event Action** tabbed page for the **metadata channel**:

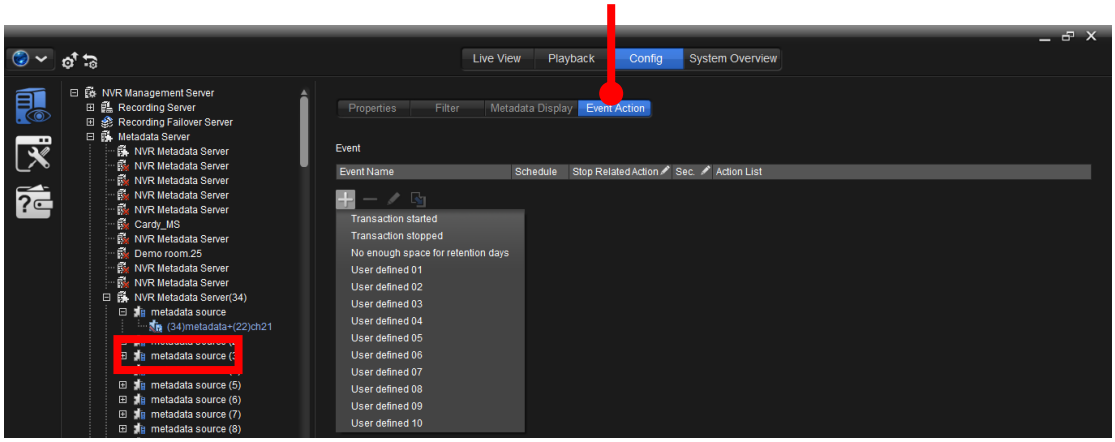
1. From the **Tree Console**, click the topic **Metadata Server**.
2. Click the topic **metadata source**.
3. Click the **metadata source** to which the **metadata channel** to configure belongs.

   The **Properties** tabbed page opens in the **Configuration Pane** for the **register channel** to configure by default.

4. Click the **Event Action** tab.

   The **Event Action** tabbed page then opens.

The **Event Action** tabbed page opens in the **Configuration Pane** to configure the selected **metadata channel**.



The featured settings are:

Group	Icon / Setting	Description
Event	+	Adds an event. ▸ Available events are **Transaction started**, **Transaction stopped** and other user definable events. ▸ Select **User define #** to create an user-defined **event**. ▸ See User defined configuration settings to know the how to create a user-defined **event**.
	−	Deletes the selected event. ▸ Click any of the event info cells to select the event.
		Edits the selected event. ▸ Click any of the event info cells to edit the info.
		Copies the event setting to another **metadata channel**.
	Event Name	Delivers the event type.

		▸ The available types are: **Transaction started**, **Transaction stopped** and up to seven other user definable events.. ▸ Select **User define #** to create an user-defined **event**. ▸ See User defined configuration settings to know the how to create an user-defined **event**.
	Schedule	Delivers the applied "**schedule**", which means one or more time period(s) in which the occurrence of the event is taken effective. ▸ Use the **Add schedule** settings to apply a **schedule** to the event. ▸ To create/delete/edit a schedule, see Schedule.
	Stop Related Action	Sets whether to stop the action launched by the **metadata channel** sometime after the event occurs or leaves it on automatic.
	Sec.	Sets when to stop the action launched by the **metadata channel** after the event occurs. ▸ 1 to 60 seconds are configurable.
	Action List	Delivers all the actions set up for the **metadata channel** to take when the event occurs.
Add schedule	+	Adds a schedule. ▸ Available options are the **schedules** created as described in Create A Schedule.
	−	Deletes the selected **schedule**. ▸ Click a **schedule** to select it.
		Edits the selected **schedule**. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** up. ▸ Click a **schedule** to select it.
		Moves the selected **schedule** down. ▸ Click a **schedule** to select it.
		Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.
		Copies the **schedule** setting to another event.
	Schedule Name	1. Delivers the name of the schedule. 2. Click the **Schedule name** cell to change the **schedule** to some other **schedule**.
	Property	Sets whether to allow or block the applied **schedule**'s time period(s).
	Description	Delivers a brief description for this **schedule** for the easier identification of it.
Add action	**Action List**	Delivers all the actions set up for the **metadata channel** to take when the event occurs.
	+	Adds an action for the **metadata channel** to take when the event occurs.
	−	Deletes the selected action. ▸ Click an action to select it.
Action properties		Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Sets which associated camera to go to the "preset point" (for **Go to Preset**). ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) ▸ No detail setting for Video Edge Display(for **Video Edge Display**) ▸ Sets which camera to popup on which monitor(for **Video Popup**)

	This group of settings is available only when any of the available actions is added.

10.1.4.7.6.4.1 User defined configuration settings

It relies on the **user defined configuration settings** to tailor-create an **event** that meets your needs to launch action(s) from the **metadata channel**.

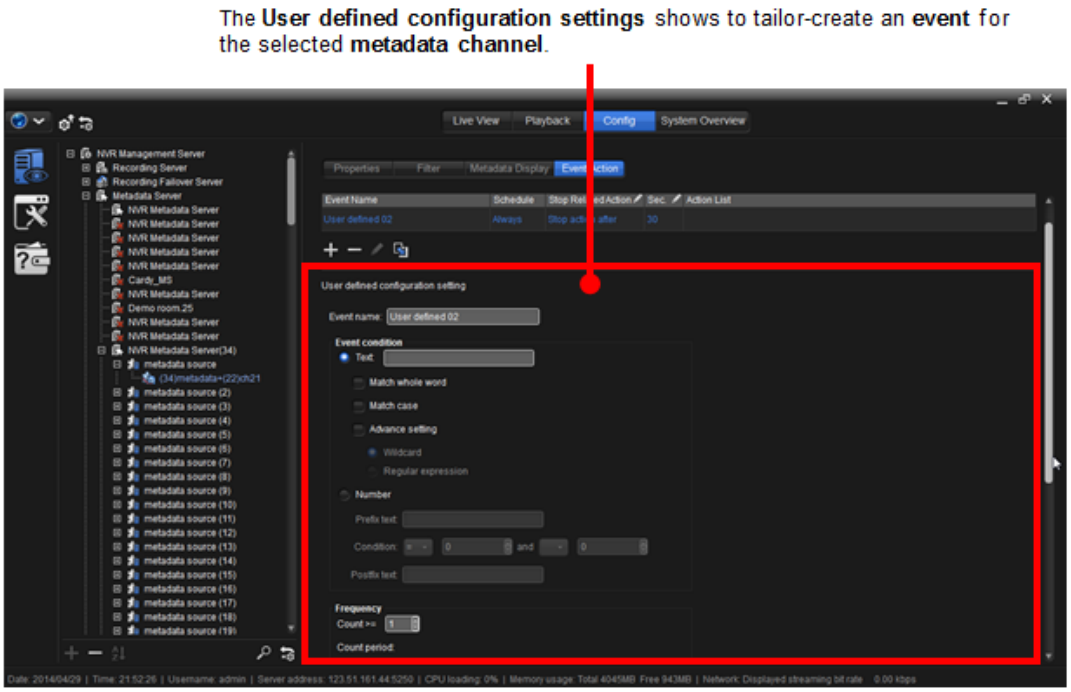
To access the **user defined configuration settings**:

1. Open the **Event Action** tabbed for the **register channel** to configure as described in Event Action.

2. Click the add icon **+**.

3. From the drop-downs that show, select any of the **User define #**.

   The **user defined configuration settings** then become available.



The featured settings are:

Group	Icon / Setting	Description

<table>
<tr><td colspan="2">Event name</td><td>Names the event to create.</td></tr>
<tr><td rowspan="2">Event condition</td><td>Text</td><td>Edits the keyword for the event to match.
▸ Three types are available: Match whole word, match case and advanced setting.<table><tr><th>Info</th><th>Description</th></tr><tr><td>Match whole word</td><td>Searches the terms as a whole word.</td></tr><tr><td>Match case</td><td>Searches names where the case matches the letters.</td></tr><tr><td>Advanced setting</td><td>Include wildcard and regular expression.</td></tr></table></td></tr>
<tr><td>Number</td><td>Edits the number for the event to match.<table><tr><th>Info</th><th>Description</th></tr><tr><td>Prefix text</td><td>Edits special text before the value’s condition.</td></tr><tr><td>Condition</td><td>Edits a number as the condition of event and select one of the symbols (<=, <, =, >, >=) to define the numeric value.</td></tr><tr><td>Postfix text</td><td>Edits special text after the value’s condition.</td></tr></table></td></tr>
<tr><td>Frequency</td><td>Count>=</td><td>Edits the event trigger times over specific numbers.</td></tr>
<tr><td></td><td>Count period</td><td>Edits count period for the event.
▸ Two count periods are available: Keyword happens within __ transaction(s) or keyword happens within __ day __ hour __min.
▸ 1 to 999 transaction(s) are configurable.
▸ 0 to 5 day(s), 0 to 23 hour(s), 0 to 59 min(s) are configurable.</td></tr>
<tr><td rowspan="10">Add schedule</td><td>+</td><td>Adds a schedule.
▸ Available options are the schedules created as described in Create A Schedule.</td></tr>
<tr><td>−</td><td>Deletes the selected schedule.
▸ Click a schedule to select it.</td></tr>
<tr><td>✎</td><td>Edits the selected schedule.
▸ Click a schedule to select it.</td></tr>
<tr><td>▲</td><td>Moves the selected schedule up.
▸ Click a schedule to select it.</td></tr>
<tr><td>▼</td><td>Moves the selected schedule down.
▸ Click a schedule to select it.</td></tr>
<tr><td></td><td>Opens a schedule overview dialog that shows the applied schedule(s) in a daily view or a weekly view.</td></tr>
<tr><td></td><td>Copies the schedule setting to another event.</td></tr>
<tr><td>Schedule Name</td><td>3. Delivers the name of the schedule.
4. Click the Schedule name cell to change the schedule to some other schedule.</td></tr>
<tr><td>Property</td><td>Sets whether to allow or block the applied schedule’s time period(s).</td></tr>
<tr><td>Description</td><td>Delivers a brief description for this schedule for the easier identification of it.</td></tr>
</table>

Add action	**Action List**	Delivers all the actions set up for the **metadata channel** to take when the event occurs.
	+	Adds an action for the **metadata channel** to take when the event occurs.
	−	Deletes the selected action. ▸ Click an action to select it.
Action properties		Sets the detail of an action. ▸ Sets which digital output pin to turn on (for **DO turn on**). ▸ Sets whom to send the alert email(s) to (for **E-Mail to multiple**) ▸ Sets which associated camera to go to the "preset point" (for **Go to Preset**). ▸ Play Alert Sound on NuClient. Please enable **Audio Notification** on Global| Client Configuration| Function| Alarm (for **Audio Notification**) ▸ No detail setting for Video Edge Display(for **Video Edge Display**) ▸ Sets which camera to popup on which monitor(for **Video Popup**) This group of settings is available only when any of the available actions is added.

The value is also case sensitive, you must key in "," symbol to search for 10,000US.

10.1.5 Configure Matrix (Ultimate level only)

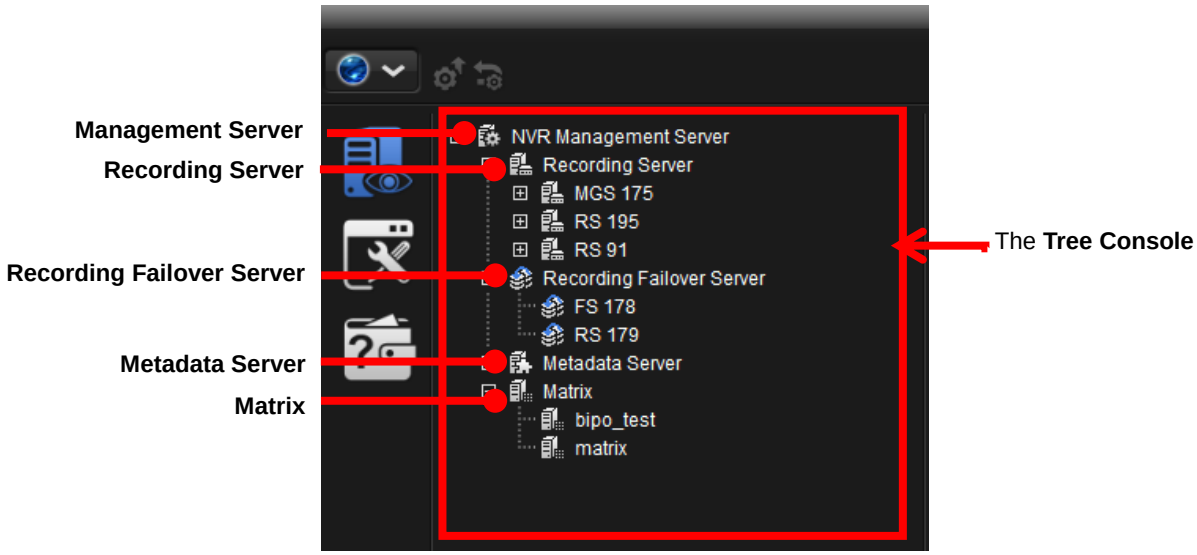
A **Matrix** is a client application to enable an unlimited number of video walls and video displays, with up to 100 channels displayed per monitor. Configure the **Matrix** to customize your video wall application.

1. Install NuMatrix. For Numatrix installation, please refer to NuMatrix.

To access the **Matrix** settings:

2. Access the **Physical Config** ("physical configuration") as described in Physical Config (Management Server).

   The physical configuration opens onscreen, and the **Tree Console** shows the topics: **Management Server, Recording Server, Recording Failover Server**, **Metadata Server**, and **Matrix**.



3. If a plus sign (+) shows besides the sub topic **Matrix**, click the plus sign (+) to collapse the existing **Matrix**(**s**). Then click the **Matrix** to configure.

OR

If a minus sign (-) shows besides the sub topic Matrix, the existing **Matrix** collapse already. Simply click the **Matrix** to configure.

The **Properties** tabbed page then opens at the **Configuration Pane** to configure the selected **Matrix Server** while the other tabbed page is hidden.

4. Access one of these tabbed pages to configure the **Matrix**.

A function overview of these tabbed pages:

Tab	Description
Properties	1. Names the **Matrix**. 2. Enters a brief description of the **Matrix** for the better identification of it. 3. Sets the IP and port for the Matrix. 4. Run a test on the connection to the Matrix Server. 5. Sets the monitor number for **Matrix**. ▸ See Properties for the settings.
Information Display	Configures which information to show on the screens of the video wall, including the grid number, server name, device name, camera name, camera bit rate, camera frame rate, date and time. ▸ See Information Display for the settings.

	Please note that only when have an "Ultimate level" license will you be able to see the Matrix interface**.**

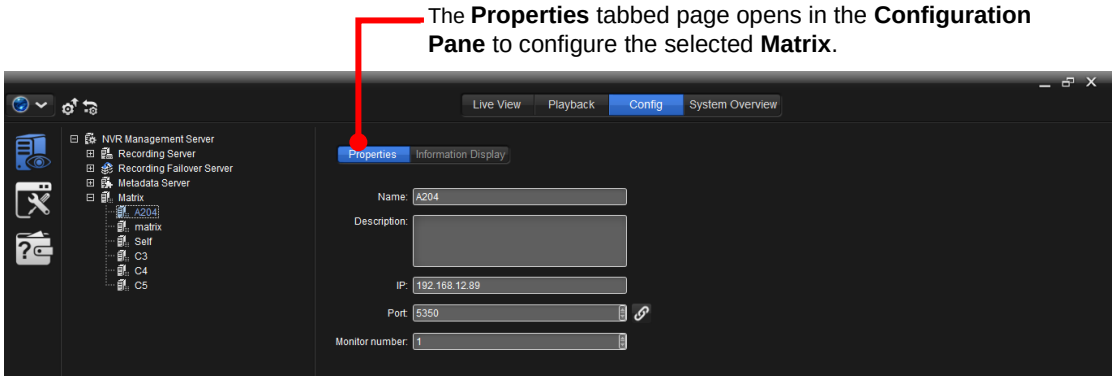
10.1.5.1 Properties

It relies on the **Properties** tabbed page to enter the information about the **Matrix** including the name and description, or to run a test on the connection to the **Matrix**.

To access the **Properties** tabbed page of the **Matrix Server** to configure:

1. From the **Tree Console**, click the topic **Matrix**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.



   The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Name	Names the **Matrix**.	"matrix"
Description	Provides a brief description for this **Matrix** for the easier identification of it.	--
IP	Sets the IP address of the **Matrix**.	127.0.0.1
Port	Sets the port for the **Matrix**. ▸ Click the icon to run a test on the connection to the **Matrix**.	5350
Monitor number	Sets the number of the monitor(s).	1

	Please note that only when have an "Ultimate level" license will you be able to see the Matrix interface**.**

10.1.5.2 Information Display

It relies on the **Information Display** tabbed page to configure which information to show on the screens of the video wall.

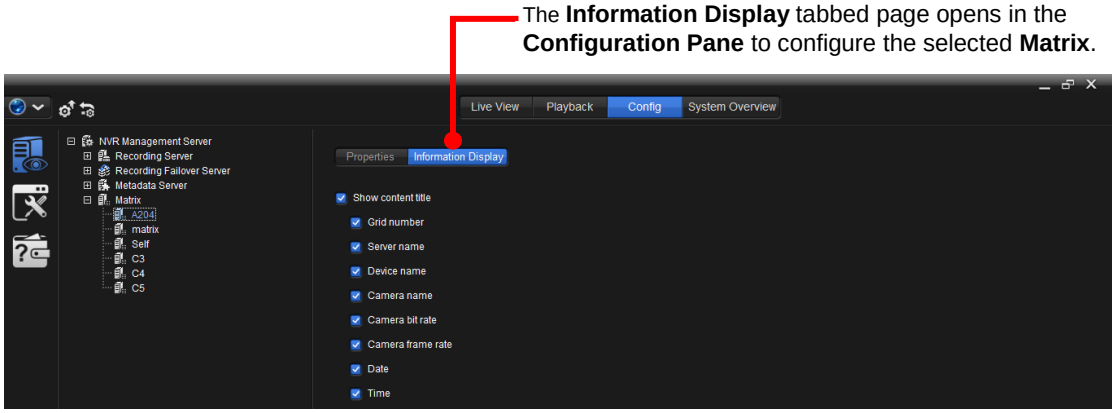
To access the **Information Display** tabbed page of the **Matrix Server** to configure:

1. From the **Tree Console**, click the topic **Matrix**.

   By default, the **Properties** tabbed page then opens at the **Configuration Pane**.

2. Click the **Information Display** tab.

   The **Information Display** tabbed page opens.



The featured settings on the **Information Display** tabbed page are:

Setting	Description	Default
Show content title	Selects/deselects all the information to show on the screens of the video wall, including the grid number, server name, camera name, camera bit rate, camera frame rate, date and time.	"Selected" (All information is enabled.)
Grid number	Enables/disables grid number info on the screens of the video wall.	"Selected" (Enabled)
Server name	Enables/disables server name info on the screens of the video wall.	"Selected" (Enabled)
Camera name	Enables/disables camera name info on the screens of the video wall.	"Selected" (Enabled)
Camera bit rate	Enables/disables showing the camera bit rate on the screens of the video wall.	"Selected" (Enabled)
Camera frame rate	Enables/disables showing the camera frame rate on the screens of the video wall.	"Selected" (Enabled)
Date	Enables/disables date info from Matrix Server on the screens of	"Selected"

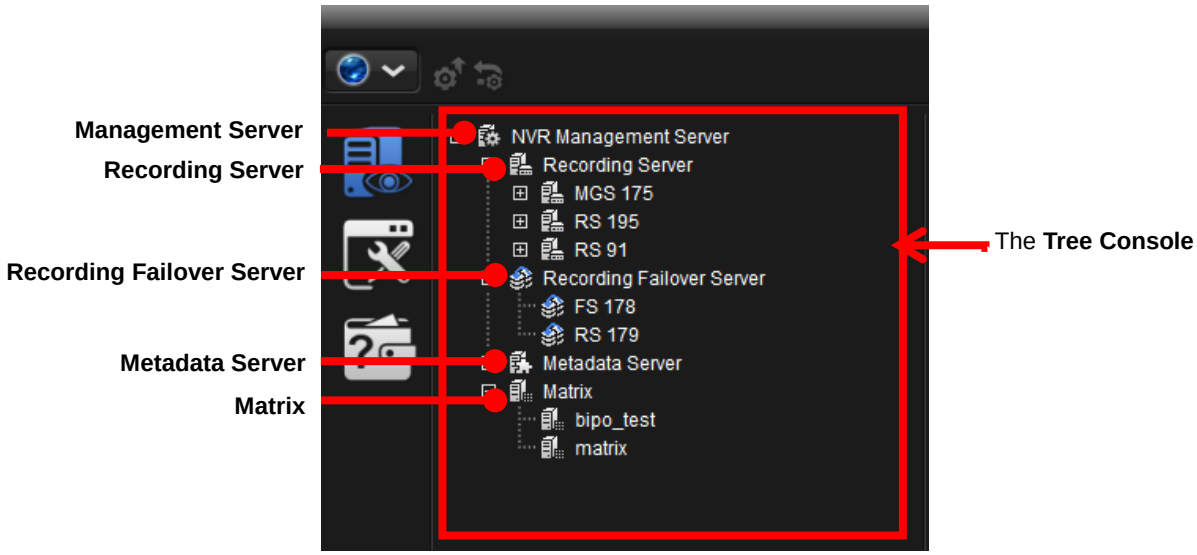
	the video wall.	(Enabled)
Time	Enables/disables time info from Matrix Server on the screens of the video wall.	"Selected" (Enabled)

10.1.5.3 Add A Matrix

To add a **Matrix** to the **Management Server**:

1. Access the **Physical Config** ("physical configuration") as described in Physical Config (Management Server).

   The physical configuration opens onscreen, and the **Tree Console** shows the topics: **Management Server, Recording Server, Recording Failover Server**, **Metadata Server**, and **Matrix**.



2. Click the sub topic **Matrix**.

   The sub topic **Matrix** becomes highlighted.

3. From the bottom of the **Tree Console**, click the add icon +.

   A new **Matrix Server**, named "matrix (#)" by default will be appended under the sub topic **Matrix**, and a **Properties** tabbed page will open in the **Configuration**

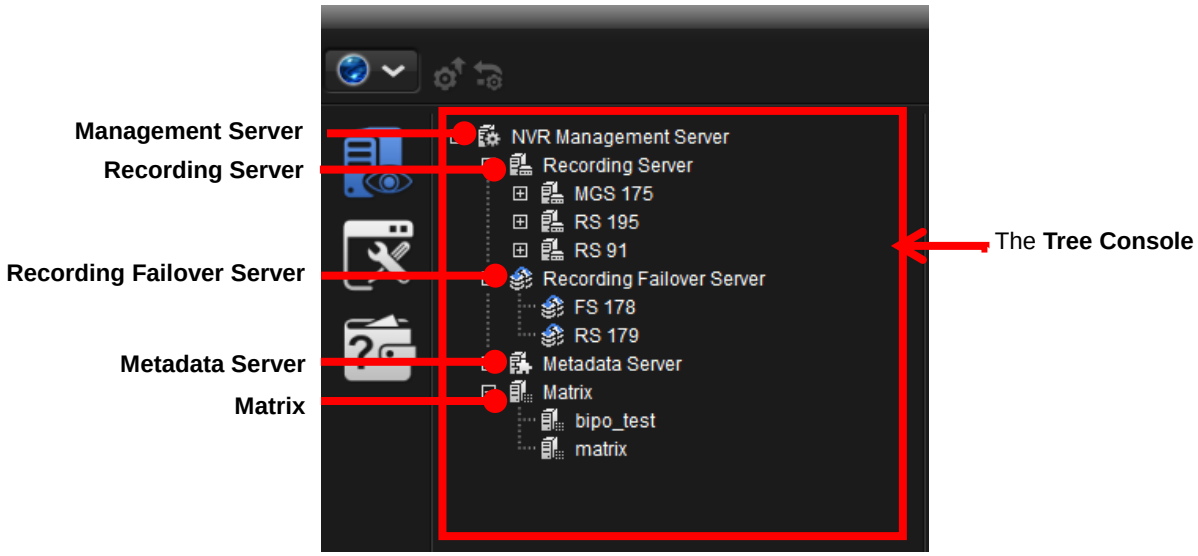
Pane for users to configure the newly added **Matrix**.

10.1.5.4 Delete A Matrix

To delete a **Matrix** from the **Management Server**:

1. Access the **Physical Config** ("physical configuration") as described in Physical Config (Management Server).

   The physical configuration opens onscreen, and the **Tree Console** shows the topics: **Management Server, Recording Server, Recording Failover Server**, **Metadata Server**, and **Matrix**.



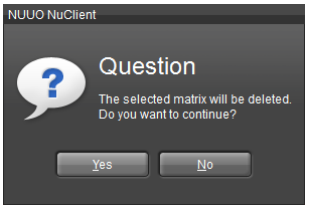
2. If a plus sign (+) shows besides the sub topic **Matrix**, click the plus sign (+) to collapse the existing **Matrix**(**s**). Then click the **Matrix** to delete.

   OR

   If a minus sign (-) shows besides the sub topic **Matrix**, the existing **Matrix**(**s**) collapse already. Simply click the **Matrix** to delete.

3. From the bottom of the **Tree Console**, click the delete icon −.

   A question dialog opens to ask for the confirmation of deletion.



4. Click **Yes** to confirm the deletion.

5. Click the **apply button** on the **Top Toolbar** to apply the change.

	Please note that only when have an "Ultimate level" license will you be able to see the Matrix interface**.**

10.2 System Configuration

System Config is the short form for “system configuration”, which means configure **Management Server** basic profile setting such as user group, role, schedule and layout.

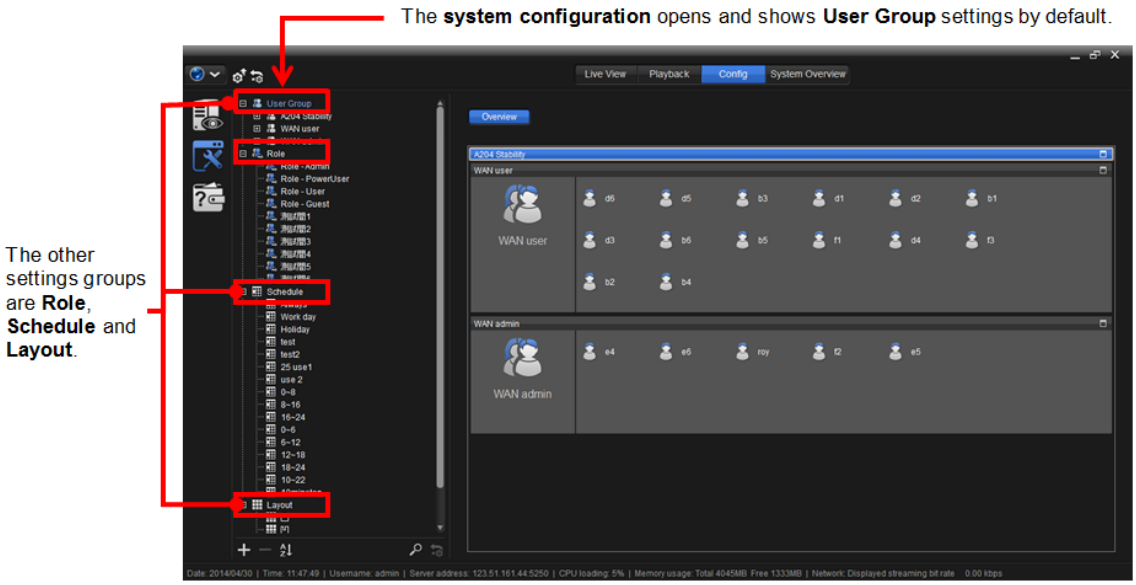
To access the **System Config** (“system configuration”):

1. Open the **NuClient** settings as described in Settings.

   The **NuClient** settings open.

2. Click the **System Config** icon from the **Config Catalog**.

   The **system configuration** then opens onscreen and shows the **User Group** settings by default (when the **NuClient** is used for the first time)



The **system configuration** features four topic settings –**User Group**, **Role**, **Schedule** & **Layout**, which are summarized as following:

Setting	Description
User Group	1. Manages and configures the "**user groups**" 2. Assigns a **Role** to a **user group**. 3. Defines the user classification, privilege and the **Login Schedule** for a **user group** and apply to the users belong to the user group. ▸ See User Group for the settings.
Role	Defines the user authentication which include privilege (permitted action(s) to take) and Permission (the permitted device(s) to access) and for a **user group** and **user**. ▸ See Role for the settings.
Schedule	Defines one or more periods of time to launch some actions from the **Management Server**. ▸ See Schedule for the settings.
Layout	Arranges the video grid that tiles multiple video channels together for view and Matrix. ▸ See Layout for the settings.

10.2.1. User Group

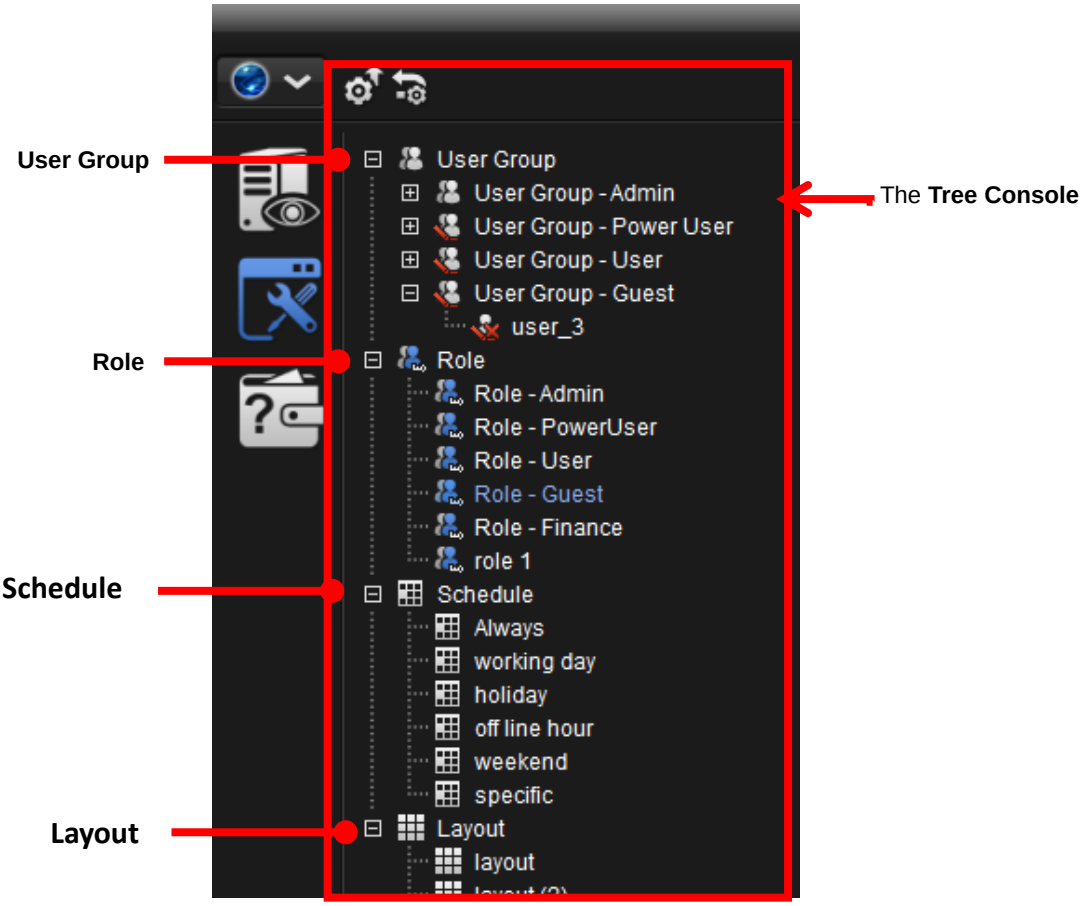
The **User Group** is a group of settings to manage and configure the "**user group(s)**" and assigns a **Role** to a **user group and user**. These settings also define the user classification, privilege and the **Login Schedule** for a **user group and apply to the users belong to the user group**. The **Login Schedule** defines the allowed time for a user of a **user group** to log in the system. See also Role and Schedule.

10.2.1.1. The User Interface

To understand the user interface of the **User Group** settings:

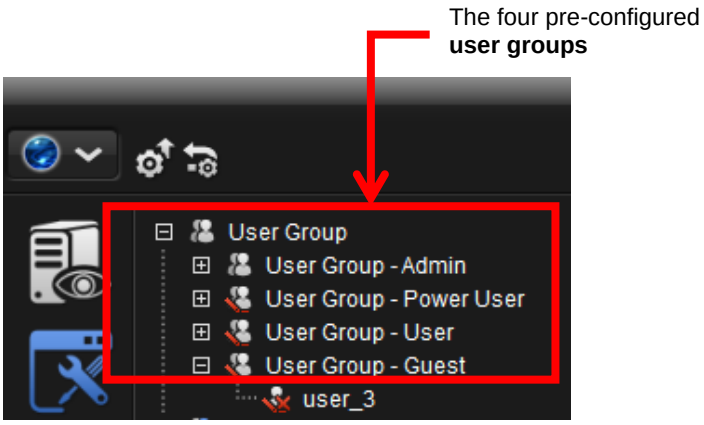
1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** then shows four setting groups: **User Group**, **Role**, **Schedule**, and **Layout**.



   And the **User Group** setting group will expand four pre-configured **user groups**:

   User Group – Admin
   User Group – Power User
   User Group – User
   User Group – Guest.

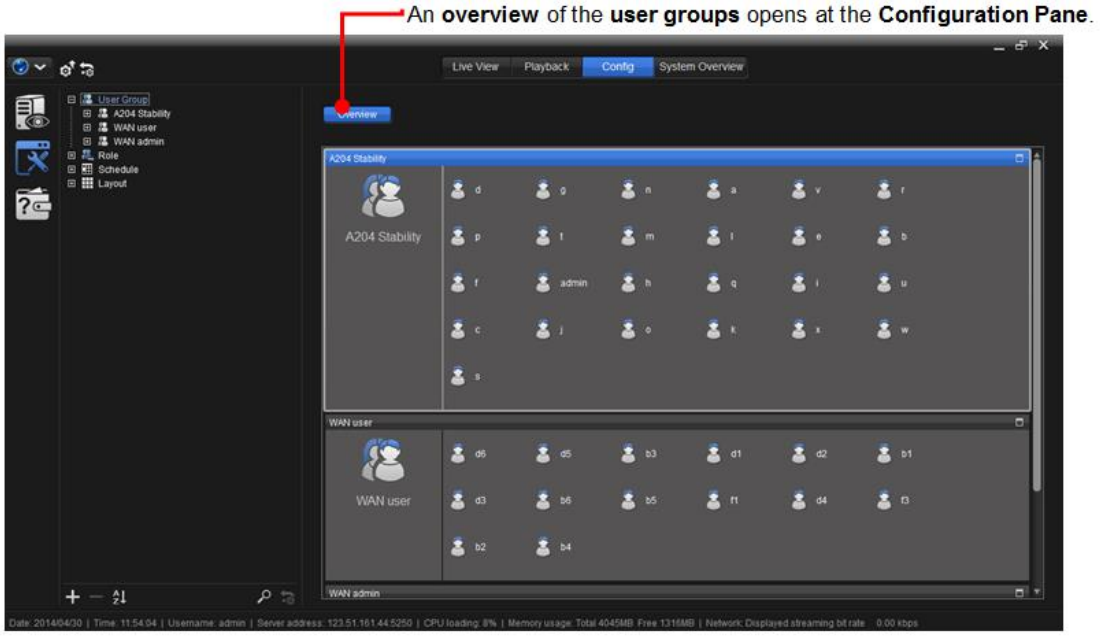


	Among the pre-configured **user groups**, **User Group – Admin** cannot be deleted while the other three are subject to change and deletion. See Configure A User Group to edit a **user group** and see Delete A User Group to delete a **user group**.

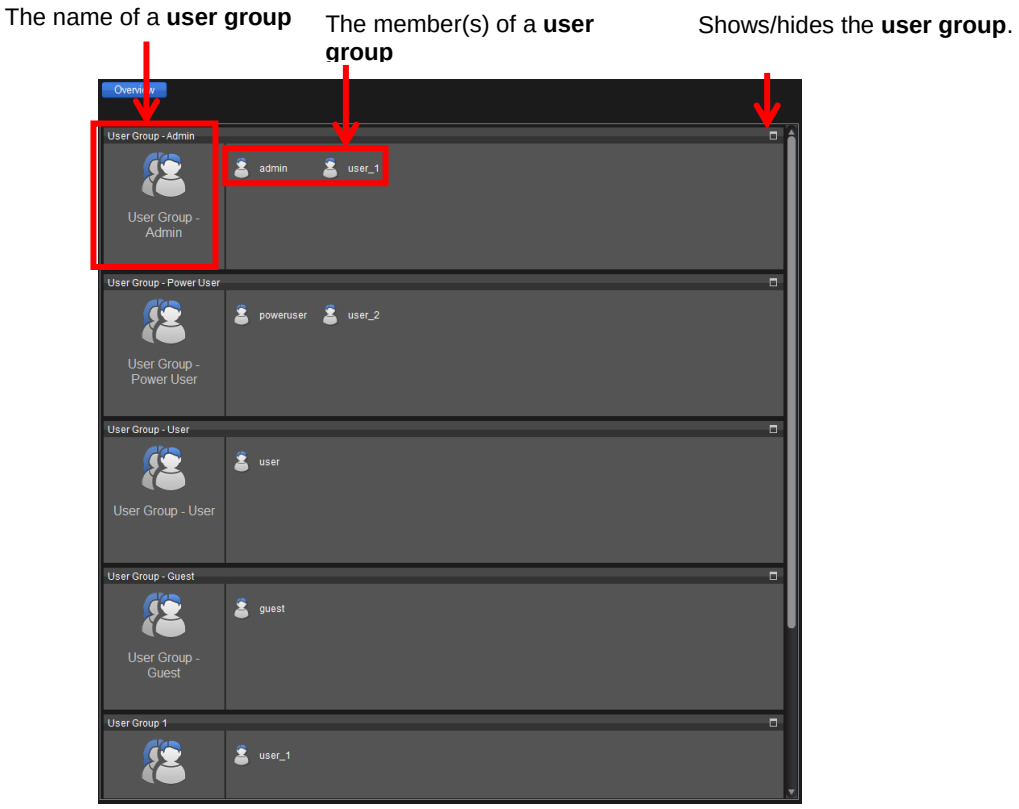
Save for the pre-configured ones, you can freely add your own **user groups** to the software. To add a **user group**, see Create A User Group.

2. From the **Tree Console**, click the topic **User Group**.

The **Overview** tabbed page then opens at the **Configuration Pane** to deliver a general view of all the existing **user groups**.



Take a closer look at the user interface. The **Overview** tabbed page actually shows all the existing **user group(s)**, with the info about the member(s) of the **user group**.



	Drag and drop a **user** to assigned **user group** to change user group of one **user**.

10.2.1.2. Access User Group Settings

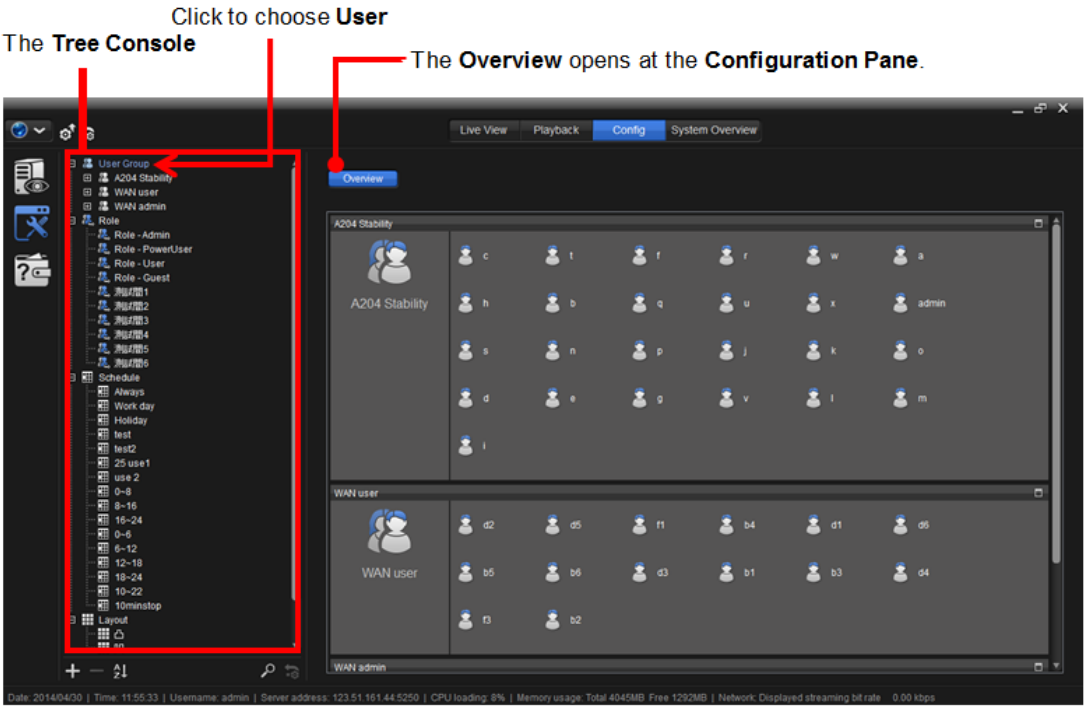
To access the **User Group** settings:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the topic **User Group**.

   The **Overview** tabbed page then opens at the **Configuration Pane**.



10.2.1.3. Create A User Group

To create a **user group**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

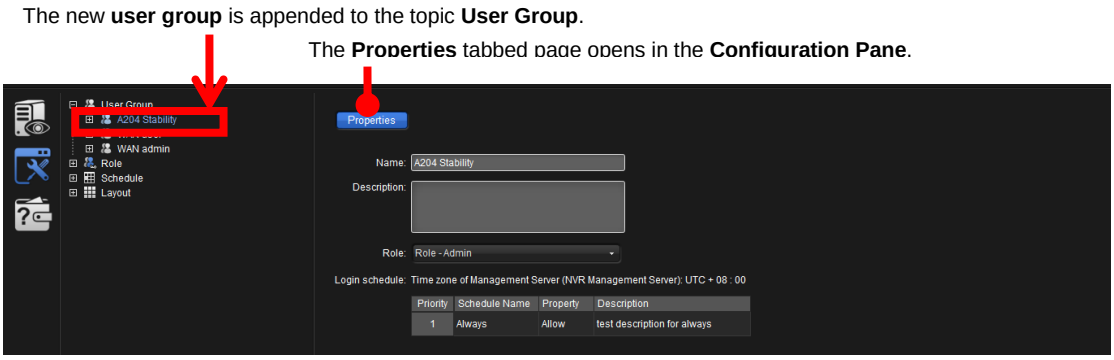
   The **Tree Console** then shows the four groups of settings – **User Group**, **Role**, **Schedule** and **Layout**.

2. Click the topic **User Group**.

   The topic **User Group** becomes highlighted

3. From the bottom of the **Tree Console**, click the add icon **+**.

A new **user group**, named “user group” by default, is then appended to the topic **User Group**, and a **Properties** tabbed page opens in the **Configuration Pane** for users to configure the newly created **user group**.



To know the settings featured on the **Properties** tabbed page, see Configure A User Group.

10.2.1.4. Delete A User Group

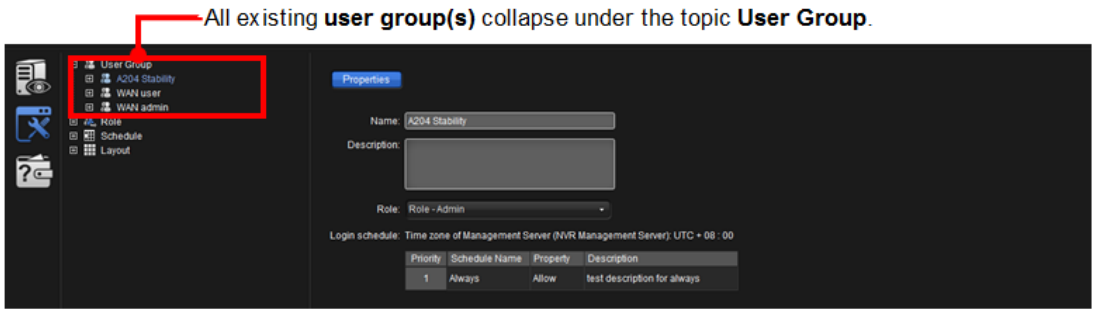
To delete a **user group**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the (+) plus sign besides the topic **User Group** if there shows a (+) plus sign.

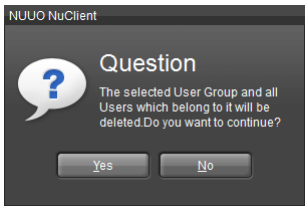
   All existing **user group(s)** then collapse under the topic **User Group**, including the software’s pre-configured ones and the created ones.



3. Click the **user group** to delete.

4. From the bottom of the **Tree Console**, click the delete icon −.

   A question dialog opens to ask for the confirmation of deletion.


NUUO NuClient
Question
The selected User Group and all Users which belong to it will be deleted.Do you want to continue?
Yes
No

5. Click **Yes** to confirm the deletion.

6. Click the **apply button** on the **Top Toolbar** to apply the change.

10.2.1.5. Configure A User Group

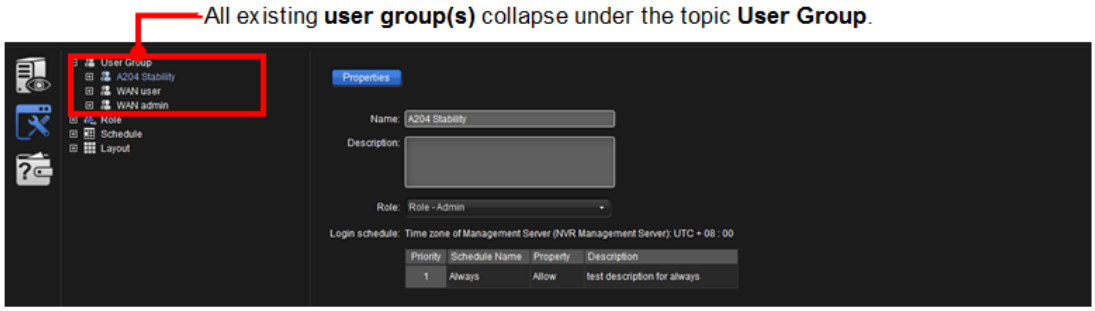
To configure an existing **user group**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

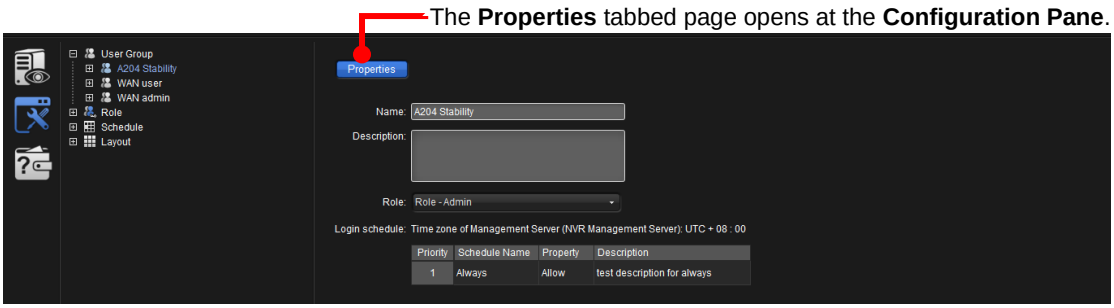
2. From the **Tree Console**, click the (+) plus sign besides the topic **User Group** if there shows a (+) plus sign.

All existing **user group(s)** then collapse under the topic **User Group**, including the software's pre-configured **user groups** and the created ones.



3. Click the **user group** to configure.

The **Properties** tabbed page then opens at the **Configuration Pane** for the **user group** to configure



The featured settings on the **Properties** tabbed page are:

<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Enable checkbox</td><td>Enables/disables a user group.</td><td>Selected (Enabled)</td></tr>
<tr><td>Name</td><td>Names the user group.</td><td>“user group”</td></tr>
<tr><td>Description</td><td>Provides a brief description for this user group for the easier identification of the user group.</td><td>--</td></tr>
<tr><td>Role</td><td>Assigns a role for the user group.
▸ See also Role.</td><td>Role - User</td></tr>
<tr><td>Login Schedule</td><td>The Login schedule table features the following settings:
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Schedule Name</td><td>1. Assigns a schedule (profile) to the user group to define the allowed time period(s) for the user group to log into the network.
2. Delivers the name of the schedule currently applied to the user group.</td><td>The Always schedule</td></tr>
<tr><td>Properties</td><td>Allows/blocks the schedule's defined period(s) of time for the user group to log in the network</td><td>Allow</td></tr>
</table></td><td></td></tr>
</table>

	Description	Delivers the brief description of the schedule (profile).	the “test description”
	+	Applies another schedule to the **user group**.	--
	−	Withdraws a schedule from a **user group**.	--
		Edits the selected cell in the **Login schedule** table: ▸ To double-click a cell in the **Login schedule** table can also edit the cell. ▸ The “**Description**” cells aren’t editable.	--
		Moves the selected schedule up as higher priority.	--
		Moves the selected schedule down as lower priority.	--
		Opens the **Schedule Overview**, a general view of the period(s) of time allowed for the **user group** to log in the network presented in a daily or weekly manner.	--

10.2.1.6. Add A User to A User Group

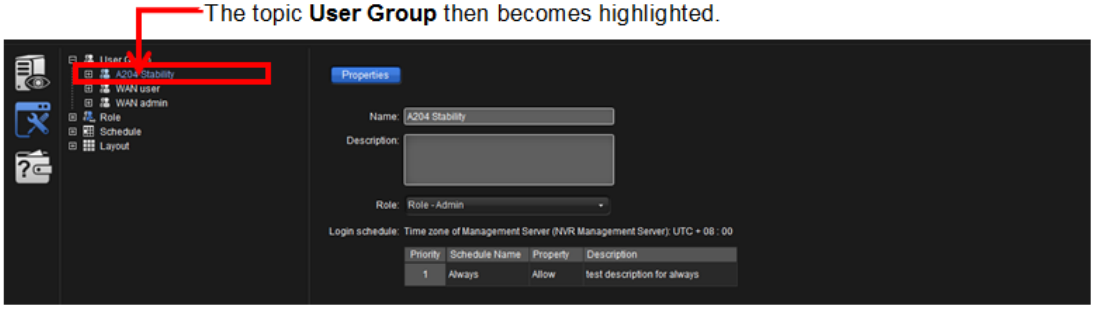
To add a **user**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the topic **User Group**.

   The topic **User Group** then becomes highlighted.



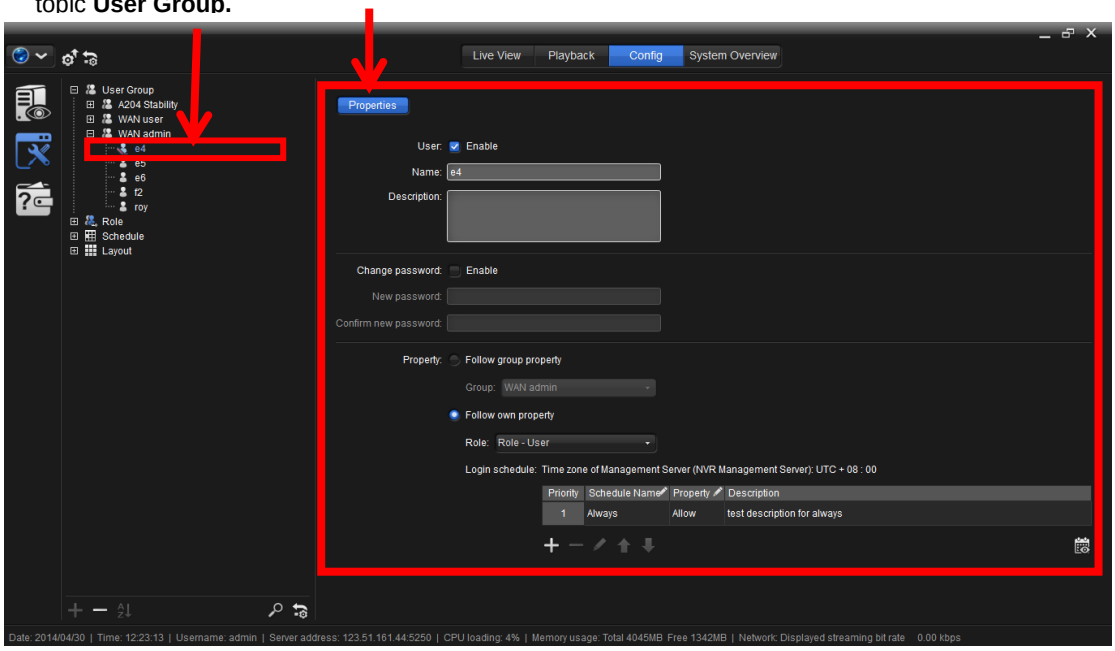
3. From the bottom of the **Tree Console**, click the add sign icon **+**.

A new **user**, named “user” by default, is then appended under the topic **User Group**, and a **Properties** tabbed page opens in the **Configuration Pane** for users to configure the newly created **user**.

The **Properties** tabbed page opens in the **Configuration Pane** for the new **user**.

A new **user group** is appended under the topic **User Group.**

The **Properties** tabbed page for the new **user group** opens in the **Configuration Pane.**



The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Enable **checkbox**	Enables/disables a **user**.	Selected (Enabled)
Name	Names the **user**.	“user”
Description	Provides a brief description for this **user** for the easier identification of the **user**.	--
Change password	Change the password for user.	--
New password	Provide new password.	--
Confirm new password	Confirm new password.	--
Property	1. Follow group property Assigns a **user group** for the **user**. 2. Follow own property	

Assigns a **role** for the **user**.

- See also Role.

The **Login schedule** table features the following settings:

Setting	Description	Default
Schedule Name	1. Assigns a **schedule** (**profile**) to the **user** to define the allowed time period(s) for the **user** to log into the network. 2. Delivers the name of the schedule currently applied to the **user**.	The **Always** schedule
Properties	Allows/blocks the schedule's defined period(s) of time for the **user** to log in the network	Allow
Description	Delivers the brief description of the schedule (profile).	the "test description"
+	Applies another schedule to the **user**.	--
−	Withdraws a schedule from a **user**.	--
	Edits the selected cell in the **Login schedule** table: • To double-click a cell in the **Login schedule** table can also edit the cell. • The "**Description**" cells aren't editable.	--
	Moves the selected schedule up as higher priority.	--
	Moves the selected schedule down as lower priority.	--
	Opens the **Schedule Overview**, a general view of the period(s) of time allowed for the **user** to log in the network presented in a daily or weekly manner.	--

If administration password is modified, the login password of Recording Servers and Metadata Servers assigned to the Management Server shall be updated on Web Hardware Settings page- Recording Service and Metadata Service.

10.2.2. Role

The **Role** is a group of settings to define the permitted action(s) to take and the permitted device(s) to access for a **user group**.

The **role** makes it highly flexible for the user authentication which include privilege (permitted action(s) to take) and permission (the permitted device(s) to access) and for a **user group** and **user**. Users need not configure the devices one by one but only have to apply one or more created **role(s)** to the **user group** and **user**. This can substantially reduce the time to configure the **user groups** and **users**.

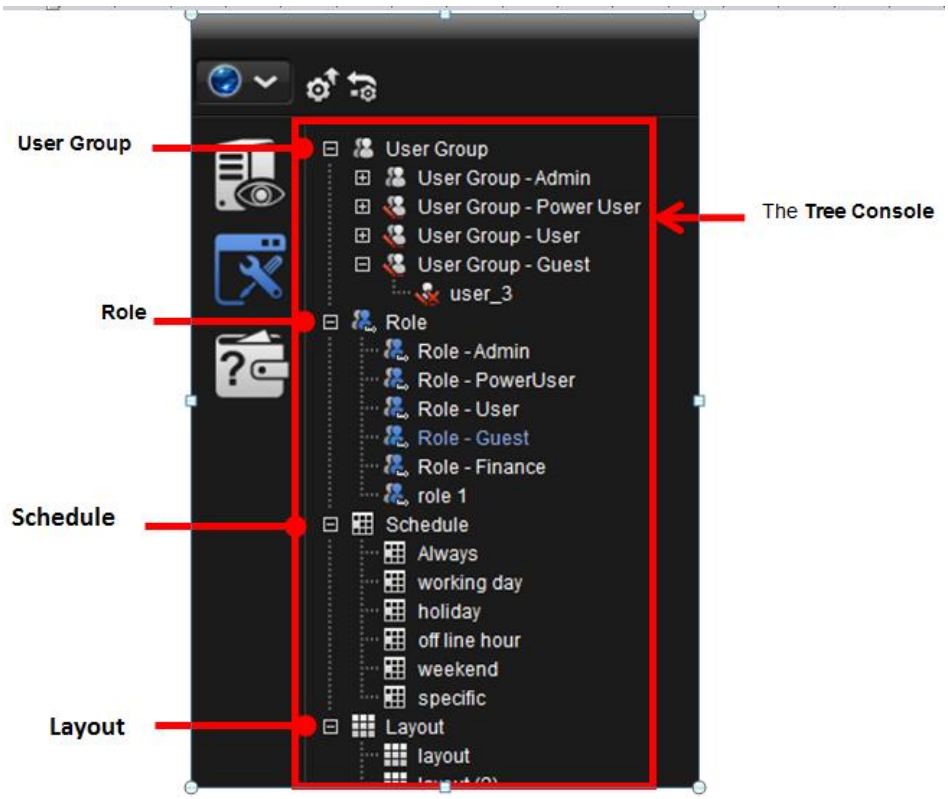
10.2.2.1. The User Interface

To understand the user interface of the **Role** group of settings:

1. Access the **System Config** (“system configuration”) as described in System Config.

   The system configuration opens onscreen, and the **Tree Console** shows four topic settings: **User Group**, **Role**, **Schedule**, and **Layout**.

   And the topic setting **Role** will expand four pre-configured **user groups**:

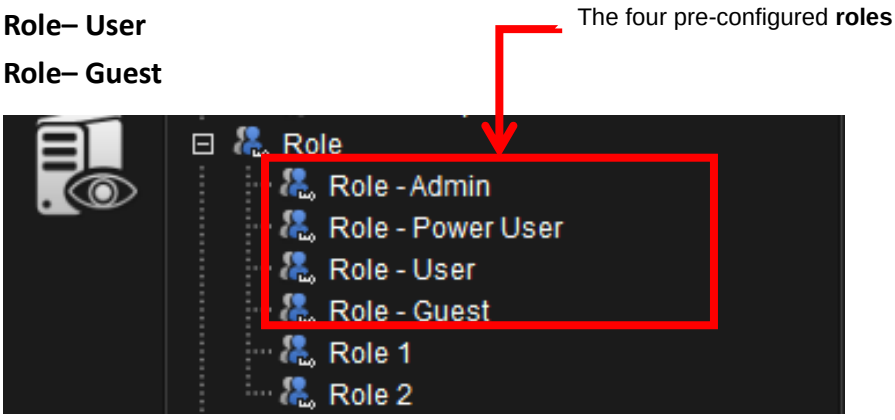


Role– Admin

Role– Power User

Role– User

Role– Guest

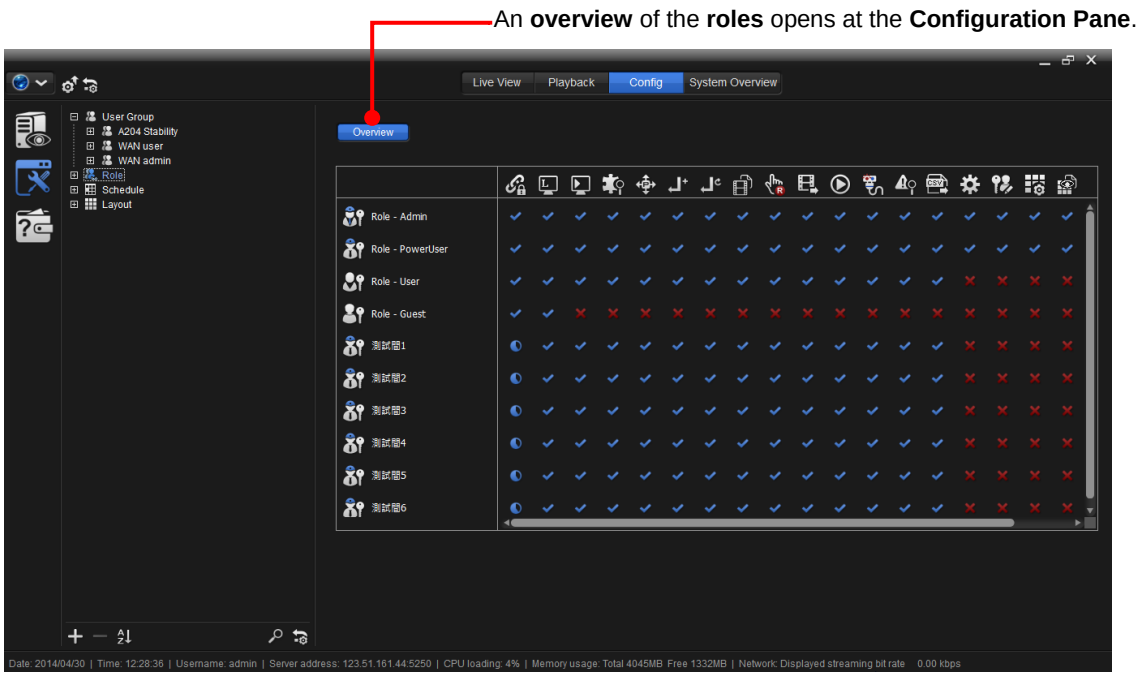


Among the pre-configured **roles**, **Role– Admin** cannot be deleted while the other three are subject to change and deletion. See Configure A Role to edit a **role** and see Delete A Role to delete a **role**.

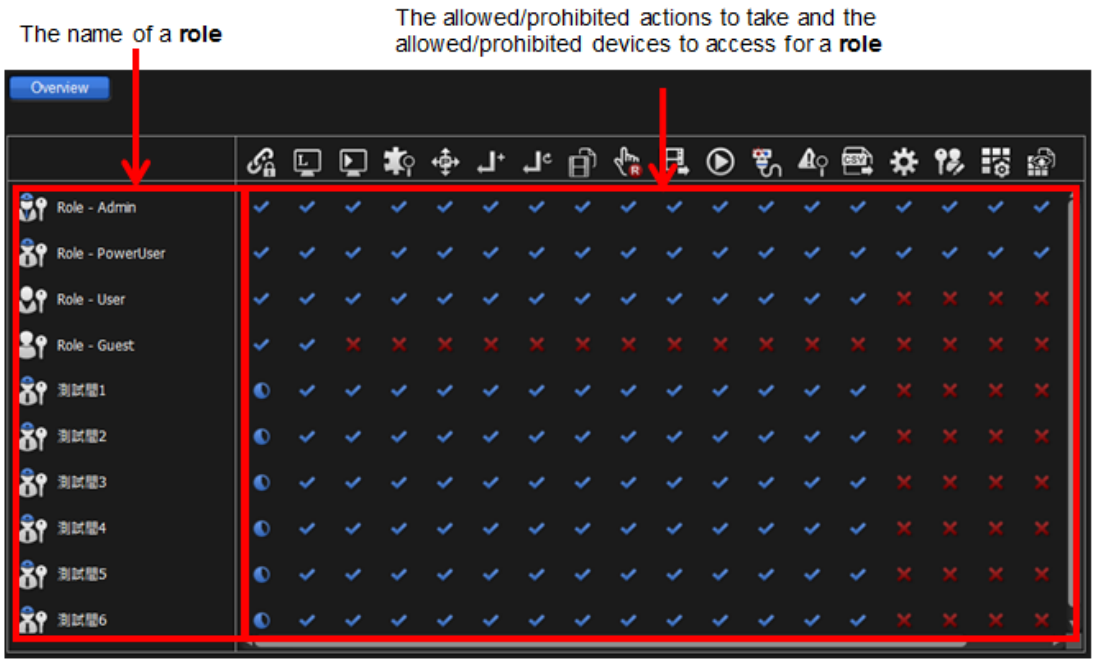
Save for the pre-configured ones, the **NuClient** users can freely add their own **roles** to the software. To add a **role**, see Create A Role.

2. From the **Tree Console**, click the topic **Role**.

The **Overview** tabbed page then opens at the **Configuration Pane** to deliver a general view of the “privileges” of all the existing **roles**.



Take a closer look at the user interface. The **Overview** tabbed page actually shows all the existing **role(s)**, with the info about their “privileges”, which means the allowed/prohibited actions to take for a **role**.



The icons for the allowed/prohibited actions to take have the following meanings:

Icon	Permitted Actions
	Access the device(s).
	Views **Live view**, the instant playback of videos.
	Views **Playback**, the playback of recorded videos.
	Searches for metadata transactions.
	Controls the optical PTZ and focus of cameras.
	Controls the “preset point”, which means the preprogrammed point of view of a camera.
	Starts/stops the camera’s “patrol”, which means a preset path that the camera goes through by schedule.
	Switches between stream profiles. A “stream profile” is a series of stream settings for mobile clients to stream videos with lower fps. Without such profile, users can neither watch live video on mobile client nor select lower fps stream on the **Live View** screen. The stream setting can also fix the resolution and frame rate for a camera brand/series.
	Manually starts video recording.
	Exports video and metadata transactions.

	Backs up video and metadata transaction.
	Triggers digital output.
	Browses events.
	Log export.
	Edits the configuration.
	Changes the password.
	Edits the layout of video grid.
	Configures the public view.

10.2.2.2. Access Role Settings

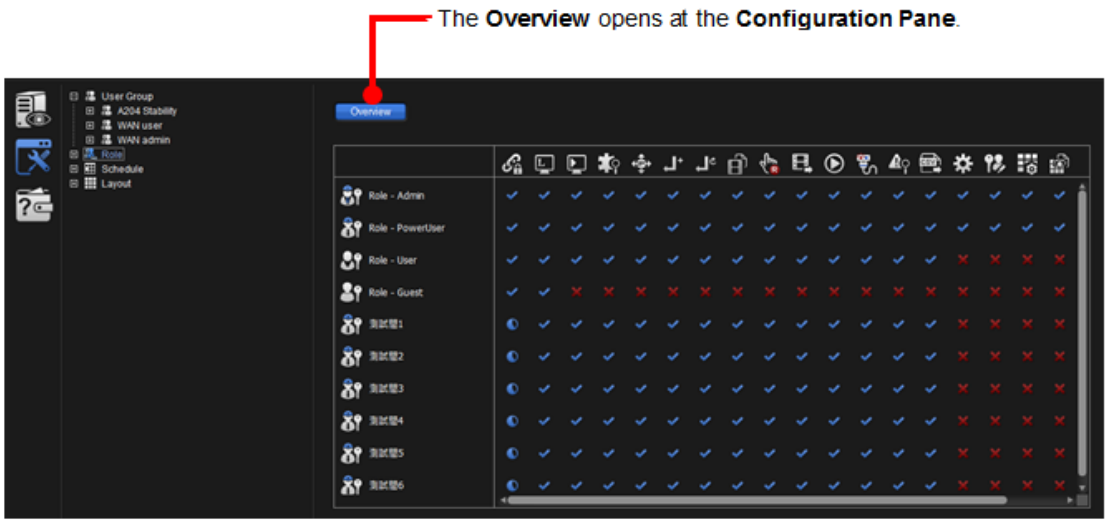
To access the **Role** settings:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** then shows four setting groups: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the topic **Role**.

   The **Overview** tabbed page then opens at the **Configuration Pane**.



10.2.2.3. Create A Role

To create a **Role**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** then shows the four groups of settings – **User Group**, **Role**, **Schedule** and **Layout**.

2. Click the topic **Role**.

   The topic **Role** becomes highlighted

3. From the bottom of the **Tree Console**, click the add icon +.

   A new **role**, named “role” by default, will be appended to the topic **Role**, and a **Properties** tabbed page will open in the **Configuration Pane** for users to configure the newly created **role** by default.

To know the settings on the **Properties** tabbed page, see Properties.
To know the settings on the **Privilege** tabbed page, see Privilege.
To know the settings on the **Permission** tabbed page, see Permission.
To know the settings on the **Priority** tabbed page, see Priority.
To know the settings on the **Matrix** tabbed page, see Matrix.

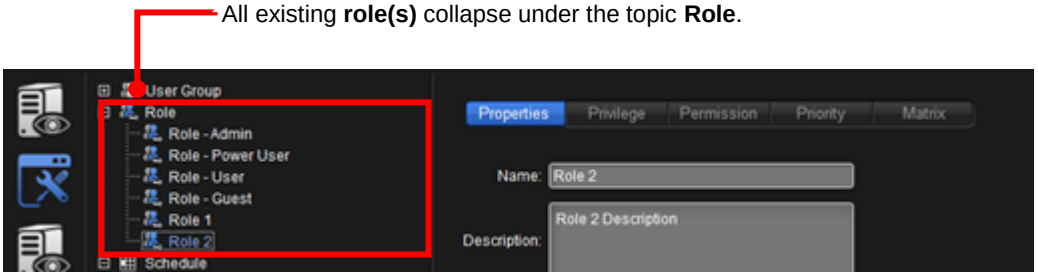
10.2.2.4. Delete A Role

To delete a **role**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

2. From the **Tree Console**, click the (+) plus sign besides the topic **Role** if there shows a (+) plus sign.

   All existing **role(s)** then collapse under the topic **Role**.

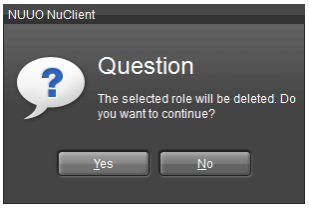


3. Click the **role** to delete.

   The **role** to delete becomes highlighted.

4. From the bottom of the **Tree Console**, click the delete icon .

   A question dialog opens to ask for the confirmation of deletion.



5. Click **Yes** to confirm the deletion.

6. Click the **apply button** on the **Top Toolbar** to apply the change.

10.2.2.5. Configure A Role

To configure an existing **role**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

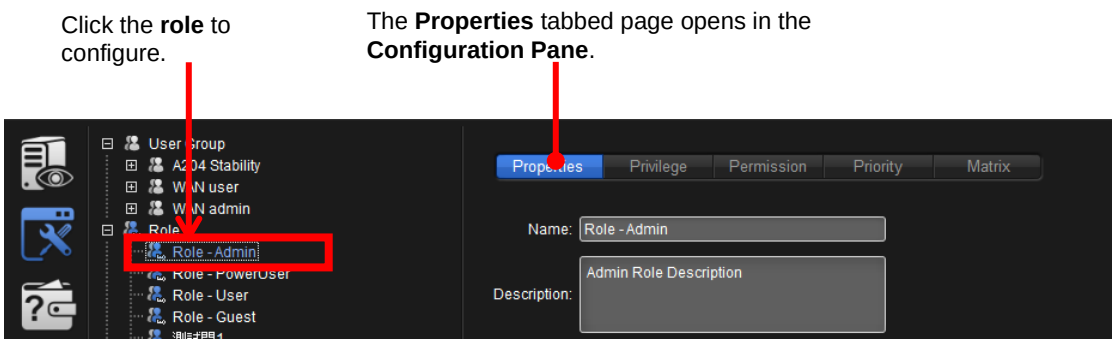
   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the (+) plus sign besides the topic **Role** if there shows a (+) plus sign.

   All existing **role(s)** then collapse under the topic **Role**, including the software's pre-configured **roles** and the created ones.

3. Click the **role** to configure.

The **Properties** tabbed page then opens at the **Configuration Pane** for the **role** to configure.



To know the settings featured on the **Properties** tabbed page, see Properties.

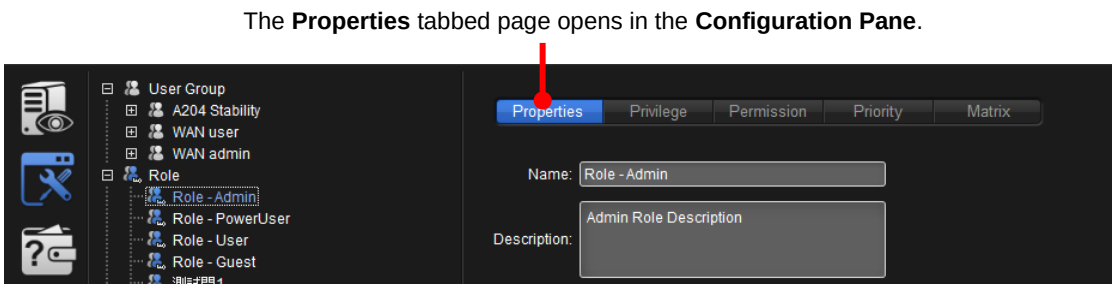
10.2.2.5.1. Properties

It relies on the **Properties** tabbed page to set the name and the description of a **role**.

To access the **Properties** tabbed page of a **role**:

1. Open the **Properties** tabbed page of the **role** to configure as described in Configure A Role.

   The **Properties** tabbed page opens in the **Configuration Pane**.



   The settings featured on the **Properties** tabbed page are:

Setting	Description	Default
Name	Names the **role**.	"role"
Description	Provides a brief description for this **role** for the easier identification of the **role**.	--

10.2.2.5.2. Privilege

It relies on the **Privilege** tabbed page to configure a **role**'s "**privilege**", which means the allowed or prohibited actions to take for a **role**.

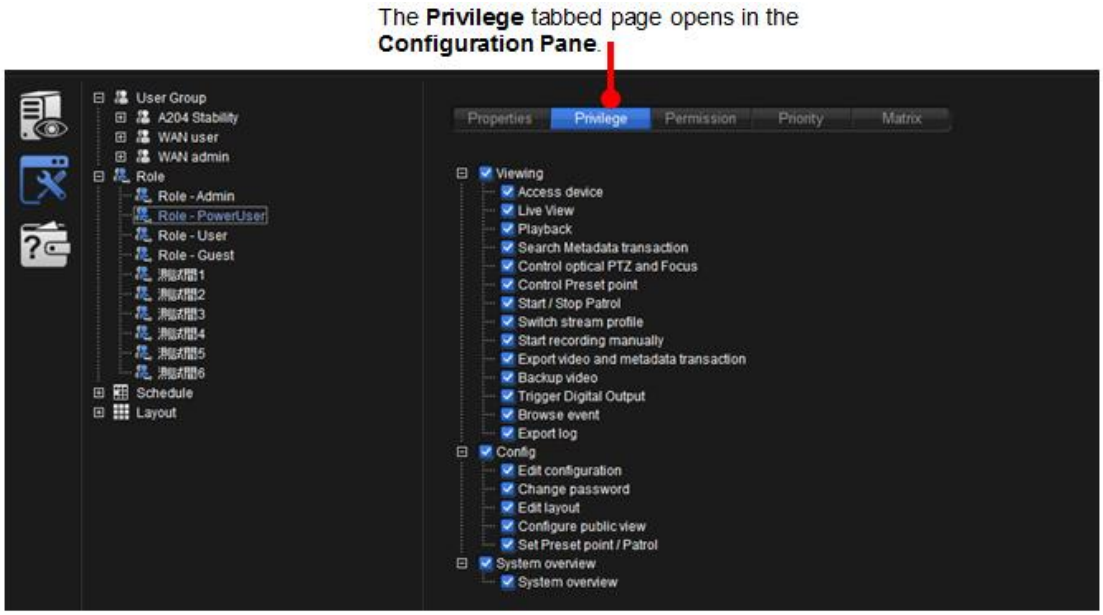
To access the **Privilege** tabbed page of a **role**:

1. Open the **Properties** tabbed page of the **role** to configure as described in Configure A Role.

   The **Properties** tabbed page opens in the **Configuration Pane**.

2. From the **Configuration Pane**, click the tab **Privilege**.

   The **Privilege** tabbed page then opens.



The settings featured on the **Privilege** tabbed page are:

Group	Setting	Description
Viewing	**Access Device**	Views the device(s).
	Live view	Views **Live view**, the instant playback of videos.
	Playback	Views **Playback**, the playback of recorded videos.
	Control optical PTZ and Focus	Controls the optical PTZ and focus of cameras.
	Control Preset point	Controls the "preset point", a pre-programmed point of view of a camera.
	Start/Stop Patrol	Starts/stops the camera's "patrol", which means a preset path that the camera goes through has scheduled.
	Switch stream profile	Switches between stream profiles. ▸ A "stream profile" is a series of stream settings for NuClient or mobile clients to stream videos with lower bit rate. Without such profile, users can neither watch live video on mobile client nor select stream in lower bit rate on the **Live View** screen.
	Start record manually	Manually starts video recording.
	Export video and metadata transaction	Exports video and metadata transactions to AVI, ASF, original AVI, or MOV files.
	Backup video	Backup video as .dat file.
	Trigger Digital Output	Triggers digital output.
	Browse event	Browses events.
	Search metadata transaction	Searches for metadata transactions.
Config	**Edit configuration**	Edits the configuration on Config tab. Without this privilege, users can't access Config tab.
	Change password	Changes the login password of Management Server.
	Edit layout	Edits the layout of video grid.
	Configure public view	Configures the public view on NuClient.
	Set Preset point / Patrol	Sets the preset point and patrol.

New added devices are default to enable all privileges and permission.

10.2.2.5.3. Permission

It relies on the **Permission** tabbed page to configure a **role**'s "**permission**", which means the allowed or prohibited device(s) to access for a **role**.

To access the **Permission** tabbed page of a **role**:

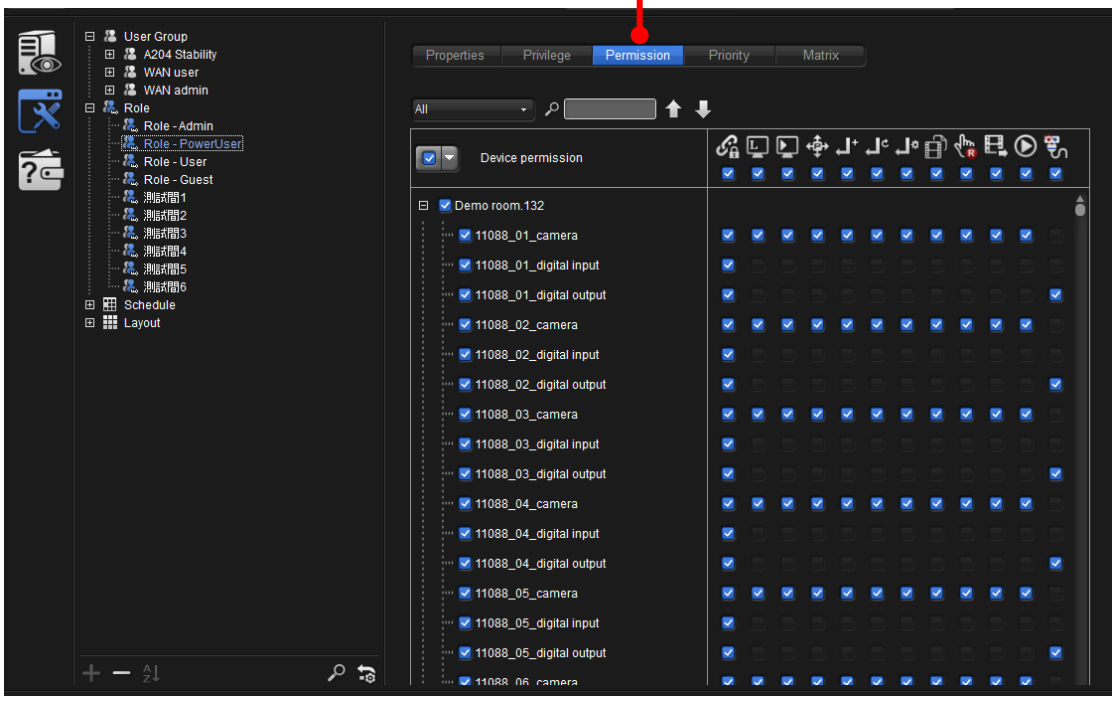
1. Open the **Properties** tabbed page of the **role** to configure as described in Configure A Role.

   The **Properties** tabbed page opens in the **Configuration Pane**.

2. From the **Configuration Pane**, click the tab **Permission**.

   The **Permission** tabbed page then opens and shows some settings and all the networked devices.

The **Permission** tabbed page opens in the **Configuration Pane**.



The settings featured on the **Privilege** tabbed page are:

Group	Setting	Description	Default
Device Permission		Selects between **All**, **None** or **Invert** to select all devices, deselect all devices or reverse the selection.	**All** (All devices are selected.)
		This is a filter to show/hide some device(s) from the device list.	**All**
		Accesses the device.	Selected (Enabled)
		Views **Live view**, the instant playback of videos.	Selected (Enabled)

		Views **Playback**, the playback of recorded videos.	Selected (Enabled)
		Controls the optical PTZ and focus of cameras.	Selected (Enabled)
		Controls the “preset point”, the pre-programmed point of view of a camera.	Selected (Enabled)
		Starts/stops the camera’s “patrol”, which means a preset path that the camera goes through has scheduled.	Selected (Enabled)
		Sets the camera preset point and patrol	Selected (Enabled)
		Switches between stream profiles. ▸ A “stream profile” is a series of stream settings for mobile clients and NuClients to stream videos with lower bit rate. Without such profile, users can neither watch live video on mobile client nor select stream in lower bit rate on the **Liveview** screen.	Selected (Enabled)
		Manually starts video recording.	Selected (Enabled)
		Exports video and metadata transactions.	Selected (Enabled)
		Backs up video transactions.	Selected (Enabled)
		Triggers digital output.	Selected (Enabled)
		1. Select a device (or a server) to enable the **role** to access it. 2. Deselect a device (or a server) to disable the **role** from accessing it.	Selected (Enabled)

10.2.2.5.4. Priority

It relies on the **Priority** tabbed page to set a **role**’s priority to control the PTZ (Pan-Tilt-Zoom), the preset point(s) and the patrol of a device. The **role** with higher priority has the right to precede others in controlling in the said features of a device. Such **role** can even lock/unlock the control right of lower-priority **roles**.

The higher-priority **role** also takes the precedence in login to the Matrix.

To access the **Priority** tabbed page of a **role**:

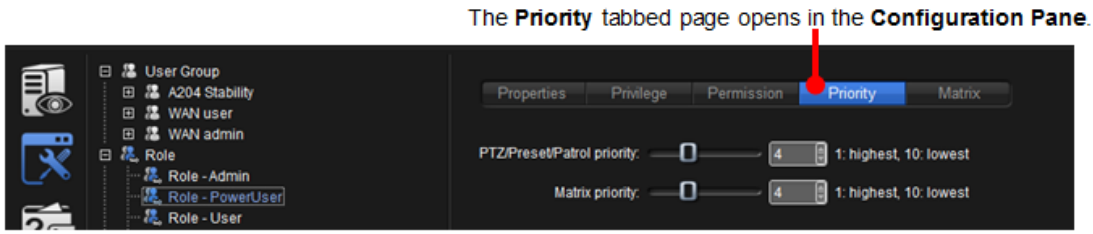
1. Open the **Properties** tabbed page of the **role** to configure as described in

Configure A Role.

The **Properties** tabbed page opens in the **Configuration Pane**.

2. From the **Configuration Pane**, click the tab **Priority**.

The **Priority** tabbed page then opens.



The featured settings on the **Priority** tabbed page are:

Setting	Description	Default
PTZ/Preset/Patrol Priority	Sets the priority for a **role** to control the PTZ, preset points and patrol of a device.	**7**
Matrix Priority	Sets the priority for a **role** to log in to a matrix. ▸ The **Matrix Priority** shows on the Ultimate level only.	**7**

	Only when the system is on "Ultimate level" will users be able to see the Matrix setting**.**

10.2.2.5.5. Matrix

It relies on the **Matrix** tabbed page to enable/disable a **role** to/from accessing a Matrix Server.

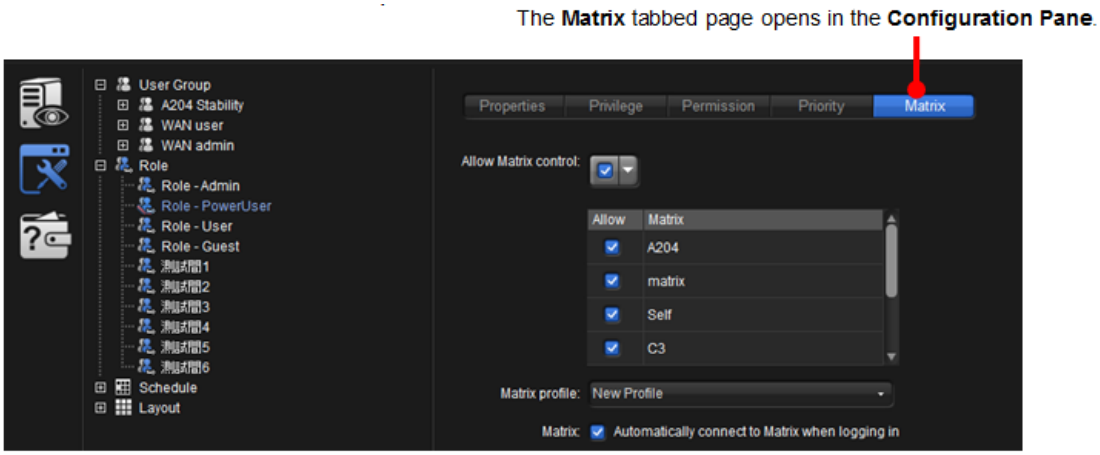
To access the **Matrix** tabbed page of a **role**:

1. Open the **Properties** tabbed page of the **role** to configure as described in Configure A Role.

The **Properties** tabbed page opens in the **Configuration Pane**.

2. From the **Configuration Pane**, click the tab **Matrix**.

The **Matrix** tabbed page then opens.



The featured settings on the **Matrix** tabbed page are:

Group	Setting	Description	Default
Matrix		Selects between **All**, **None** or **Invert** to select all Matrix, deselect all Matrix or reverse the selection. ▸ To select a Matrix is to enable users with the **role** to access it. ▸ To deselect a Matrix Server is to disable the **role** from accessing it.	**All** (All Matrix are selected.)
		Enables/disables users with the **role** to/from accessing the Matrix. ▸ To select a Matrix is to enable users with the **role** to access it. ▸ To deselect a Matrix is to disable the **role** from accessing it.	Selected (Enabled)
View profile		Sets the **view profile** that applies when users with the **roles** logs in the **matrix**. ▸ See Matrix to know more about the **view profile**.	None
Video wall		Sets whether to allow users with the **role** to auto log in the matrix when the user logs in the **NuClient**.	Deselected (Not allowed)

	Please note that only when have an "Ultimate level" license will you be able to see the Matrix setting**.**

10.2.3. Schedule

The "**schedule**" is a **schedule profile** that defines one or more periods of time to launch some actions from the system, including the times to record videos, the times to stream data from the third-party device servers, filtering the times in which the occurrence of an event is taken effective, and the allowed login period for a **user**.

The **schedule profiles** make it highly flexible to manipulate the time for the system to take actions. Users don't need to schedule the devices one by one but only have to apply the created **schedule profile(s)** to the devices. This can substantially reduce the time to schedule a large group of devices.

By default, all **roles** are assigned the default **schedule profile**, which is **Always**, which means around-the-clock.

The schedule profiles are applied to the following settings:

1. System Config | User group | User group | Properties | Login schedule
2. Physical Config | Management Server | Recording Server | Video device | Camera | Recording Schedule
3. Physical Config | Management Server | Recording Server | Video device | Camera | Event Action
4. Physical Config | Management Server | Metadata Server | POS device | Channel | Properties | Streaming schedule
5. Physical Config | Management Server | Metadata Server | Access Control device | Channel | Properties | Streaming schedule
6. Physical Config | Management Server | Metadata Server | POS device | Channel | Event Action | Add schedule
7. Physical Config | Management Server | Metadata Server | Access Control device | Channel | Event Action | Add schedule

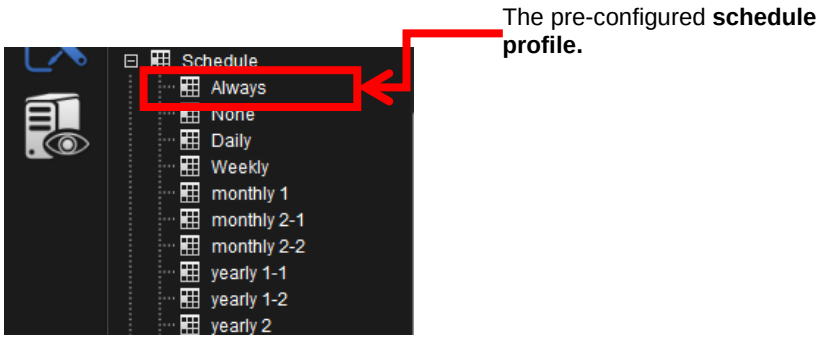
10.2.3.1. The User Interface

To understand the user interface of the **Schedule** group of settings:

1. Access the **System Config** (“system configuration”) as described in System Config.

   The system configuration opens onscreen, and the **Tree Console** shows four topic settings: **User Group**, **Role**, **Schedule**, and **Layout**.

   And the topic setting **Schedule** will expand the pre-configured **schedule profile**: **Always**.



The pre-configured schedule profile is **Always**, which cannot be changed and deleted. However users are able to freely add their own **schedule profiles**. The user-created **schedule profiles** are subject to change and deletion.

To add a **schedule profile**, see Create A Schedule.
To edit a **schedule profile**, see Configure A Schedule.
To delete a **schedule profile**, see Delete A Schedule.

10.2.3.2. Access Schedule Settings

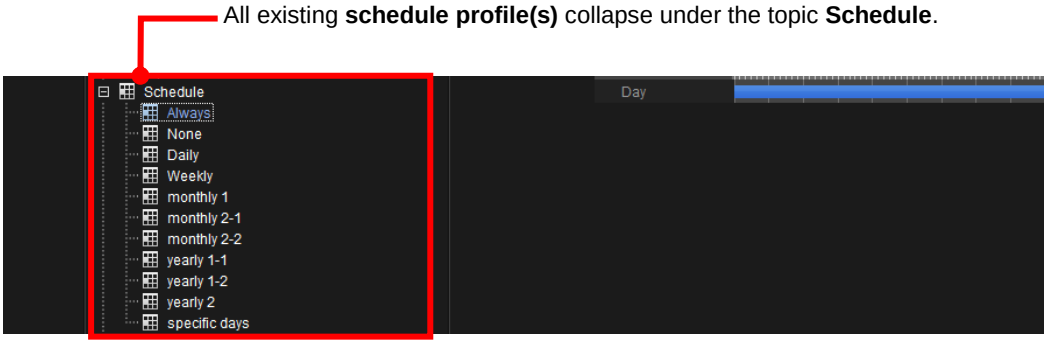
To access the **Schedule** settings:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** then shows four setting groups: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the (+) plus sign besides the topic **Schedule** if there shows a (+) plus sign.

   All existing **schedule profile(s)** then collapse under the topic **Schedule**, including the software's pre-configured ones and the created ones.



10.2.3.3. Create A Schedule

To create a **Schedule**:

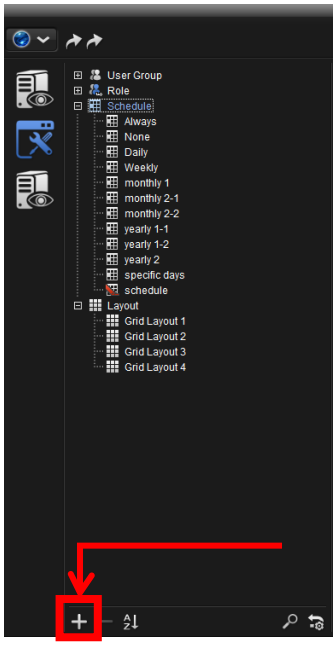
1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** then shows the four groups of settings – **User Group**, **Role**, **Schedule** and **Layout**.

2. Click the topic **Schedule**.

   The topic **Schedule** becomes highlighted

3. From the bottom of the **Tree Console**, click the add icon **+**.



Click the add icon+.

A new **schedule profile**, named “schedule” by default, will be appended to the topic **Schedule**, and a **Properties** tabbed page will open in the **Configuration Pane** for users to configure the newly created **schedule (profile)**.

To know the settings on the **Properties** tabbed page, see Properties.

10.2.3.4. Delete A Schedule

To delete a **schedule profile**:

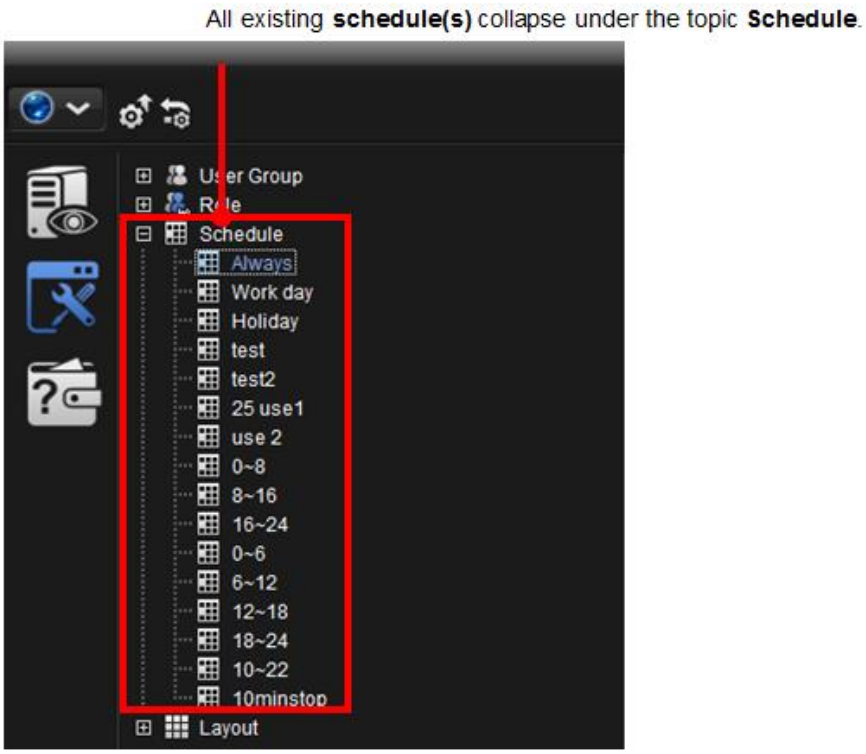
1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the (+) plus sign besides the topic **Schedule** if there shows a (+) plus sign.

   All existing **schedule profile(s)** then collapse under the topic **Schedule**, including

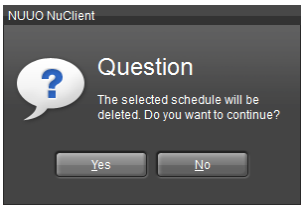
the software's pre-configured ones and the created ones.



3. Click the **schedule profile** to delete.

   The **schedule profile** to delete becomes highlighted.

4. From the bottom of the **Tree Console**, click the delete icon —.
   A question dialog opens to ask for the confirmation of deletion.



5. Click **Yes** to confirm the deletion.

6. Click the **apply button** on the **Top Toolbar** to apply the change.

10.2.3.5. Configure A Schedule

To configure an existing **schedule profile**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the (+) plus sign besides the topic **Schedule** if there shows a (+) plus sign.

   All existing **schedule profile(s)**then collapse under the topic **Schedule**, including the software's pre-configured ones and the created ones.

3. Click the **schedule profile** to configure.

   The **schedule profile** to delete becomes highlighted.

To know the settings featured on the **Properties** tabbed page, see Properties.

10.2.3.5.1. Properties

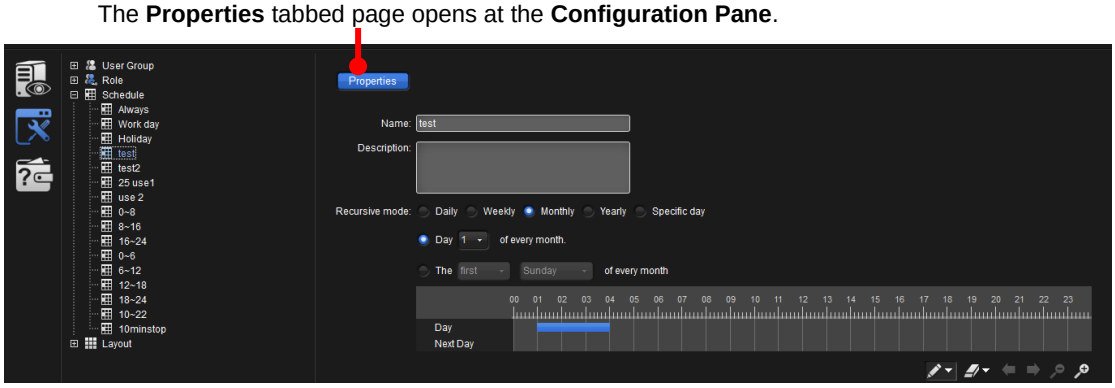
It relies on the **Properties** tabbed page to configure a **schedule profile**.

To access the **Properties** tabbed page of a **schedule profile**:

1. Open the **Properties** tabbed page of the **schedule profile** to configure as described in Configure A Schedule.

The **Properties** tabbed page opens in the **Configuration Pane** for the **schedule profile** to configure.

The **Properties** tabbed page opens at the **Configuration Pane**.



The settings featured on the **Properties** tabbed page are:

Setting	Description	Default
Name	Names the **schedule profile**.	"schedule"
Description	Provides a brief description for this **schedule profile** for the easier identification of it.	--
Recursive mode	Sets the configuration mode between **Daily**, **Weekly**, **Monthly**, **Yearly** and **Specific day**. ▸ Select **Daily** to set how often for an event or an action to take place on a daily basis. See "Daily" settings for details. ▸ Select **Weekly** to set how often for an event or an action to take place on a weekly basis. See "Weekly" settings for details. ▸ Select **Monthly** to set how often for an event or an action to take place on a monthly basis. See "Monthly" settings for details. ▸ Select **Yearly** to set how often for an event or an action to take place on an annually basis. See "Yearly" settings for details. ▸ Select **Specific day** to set the day for an event or an action to take place. See "Specific day" settings for details.	**Daily**

10.2.3.5.1.1. "Daily" settings

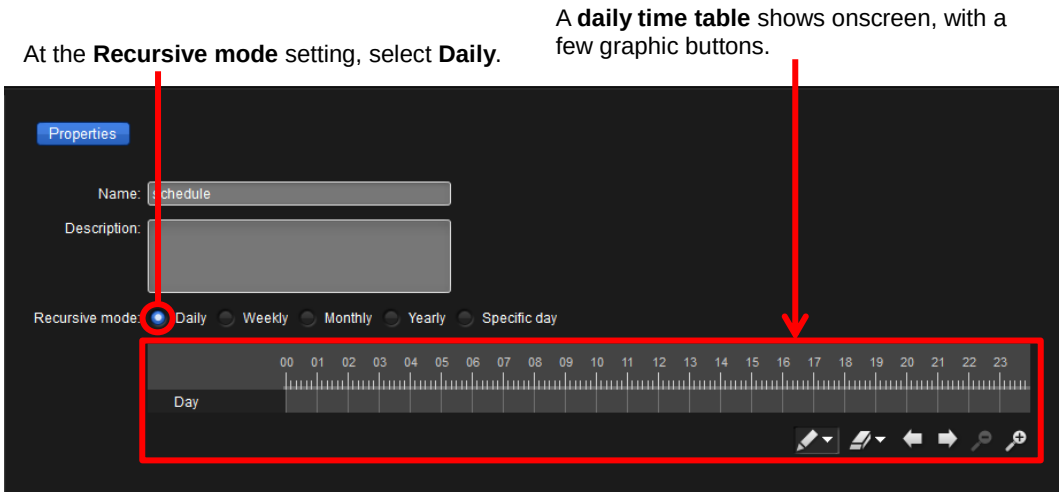
Use the **Daily** settings of a **schedule profile** to set how often for an event or an action to take place on a daily basis.

To access the **Daily** settings of a **schedule profile**:

1. Open the **Properties** tabbed page of the **schedule profile** as described in Configure A Schedule.

2. At the **Recursive mode** setting, select **Daily**.

   A **daily time table** shows onscreen, with a few graphic buttons.


At the **Recursive mode** setting, select **Daily**.
A **daily time table** shows onscreen, with a few graphic buttons.
Properties
Name:
Description:
Recursive mode:
Daily
Weekly
Monthly
Yearly
Specific day
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Day

   The featured “daily” settings are:

Setting / Graphic Button	Description
daily time table	Click a time slot or drag through multiple time slots on the **daily time table** to select or deselect one or more time slot(s) in a day. ▸ Click button to be able to select a time slot. ▸ Click button to be able to deselect a time slot.
	Click this button to be able to select a time slot. ▸ Click the down arrow icon to select all time slots of a day.
	Click this button to be able to deselect a time slot. ▸ Click the down arrow icon to deselect all selected time slots.
	Zooms out the **daily time table** to bring more time slots into view.
	Zooms in the **daily time table** to make more specific selection of time slot(s).
	Scrolls the **daily time table** to the left.
	Scrolls the **daily time table** to the right.

10.2.3.5.1.2. “Weekly” settings

Use the **Weekly** settings of a **schedule profile** to set how often for an event or an action to take place on a weekly basis.

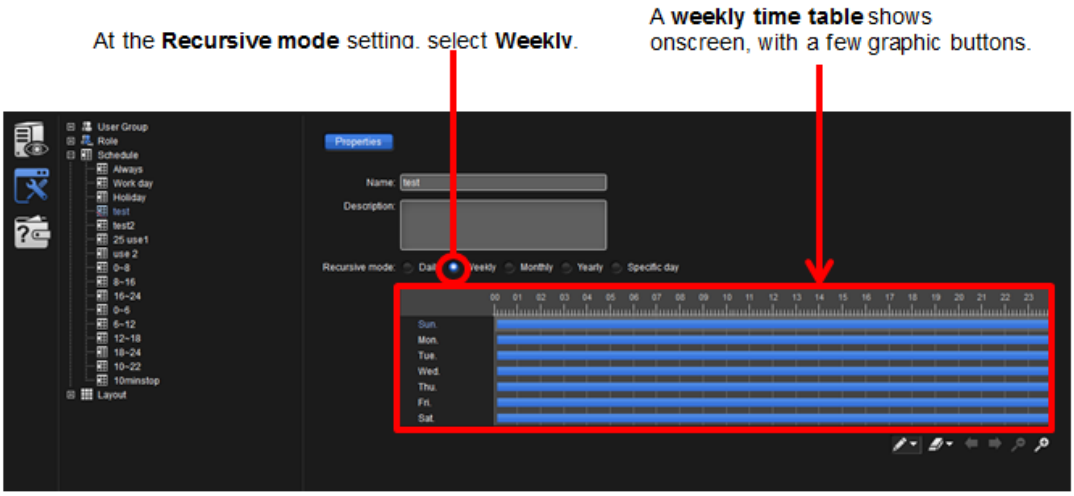
To access the **Weekly** settings of a **schedule profile**:

1. Open the **Properties** tabbed page of the **schedule profile** as described in

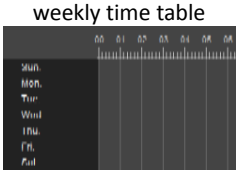
Configure A Schedule.

2. At the **Recursive mode** setting, select **Weekly**.

A **weekly time table** shows onscreen, with a few graphic buttons.



The featured “weekly” settings are:

Setting / Graphic Button	Description
weekly time table 	Click a time slot or drag through multiple time slots on the **weekly time table** to select or deselect one or more time slot(s) in a week. ▸ Click button to be able to select a time slot. ▸ Click button to be able to deselect a time slot.
	Click this button to be able to select a time slot. ▸ Click the down arrow icon to select all time slots of a week.
	Click this button to be able to deselect a time slot. ▸ Click the down arrow icon to deselect all selected time slots.
	Zooms out the **weekly time table** to bring more time slots into view.
	Zooms in the **weekly time table** to make more specific selection of time slot(s).
	Scrolls the **weekly time table** to the left.
	Scrolls the **weekly time table** to the right.

10.2.3.5.1.3. “Monthly” settings

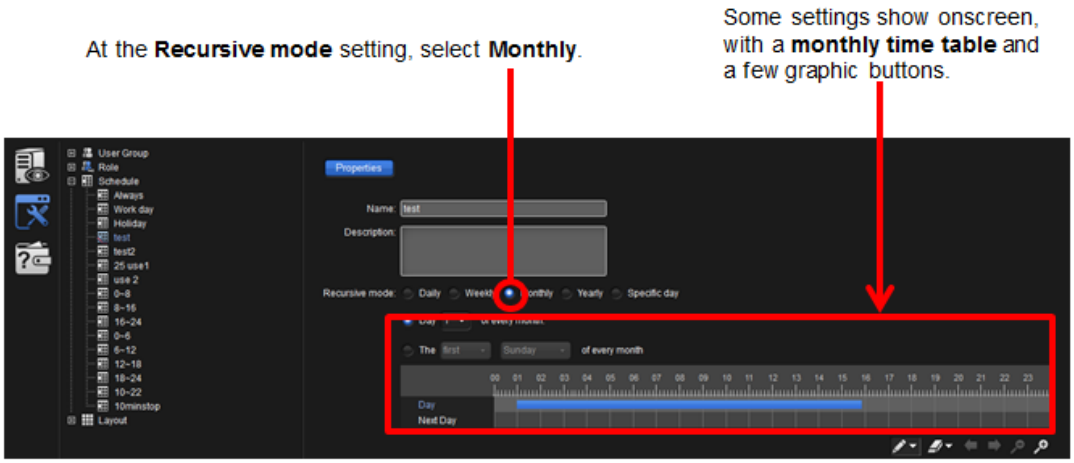
Use the **Monthly** settings of a **schedule profile** to set how often for an event or an action to take place on a monthly basis.

To access the **Monthly** settings of a **schedule profile**:

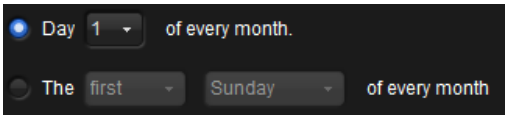
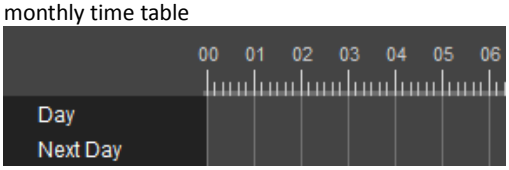
1. Open the **Properties** tabbed page of the **schedule profile** as described in Configure A Schedule.

2. At the **Recursive mode** setting, select **Monthly**.

   Some settings show onscreen, with a **monthly time table** and a few graphic buttons.



The featured “monthly” settings are:

Setting / Graphic Button	Description
	Sets which day of every month to configure, or which day of a week of every month to configure.
monthly time table 	Click a time slot or drag through multiple time slots on the **monthly time table** to select or deselect one or more time slot(s) in a month. ▸ Click button to be able to select a time slot. ▸ Click button to be able to deselect a time slot.
	Click this button to be able to select a time slot. ▸ Click the down arrow icon ▼ to select all time slots of a month.
	Click this button to be able to deselect a time slot. ▸ Click the down arrow icon ▼ to deselect all selected time slots.

	Zooms out the **monthly time table** to bring more time slots into view.
	Zooms in the **monthly time table** to make more specific selection of time slot(s).
	Scrolls the **monthly time table** to the left.
	Scrolls the **monthly time table** to the right.

10.2.3.5.1.4. "Yearly" settings

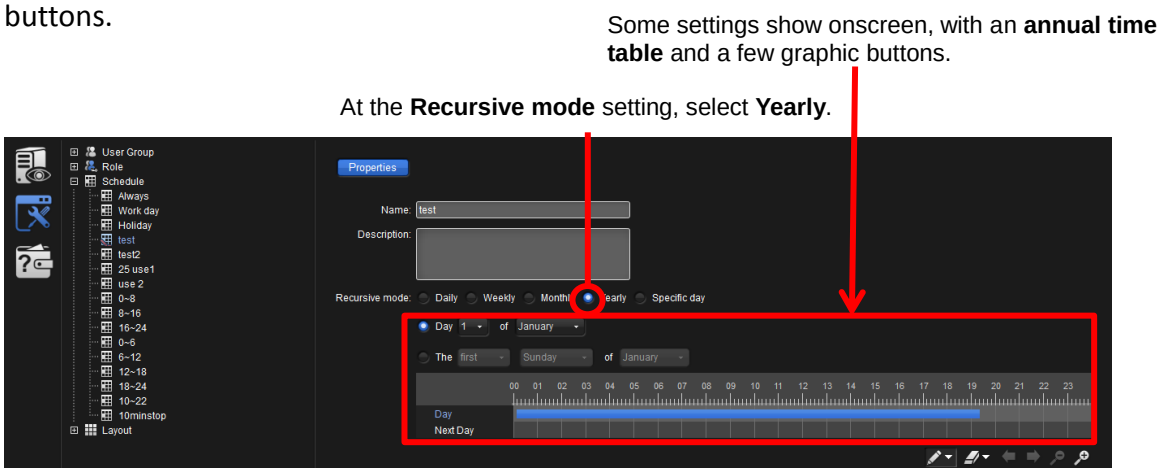
Use the **Yearly** settings of a **schedule profile** to set how often for an event or an action to take place on an annual basis.

To access the **Yearly** settings of a **schedule profile**:

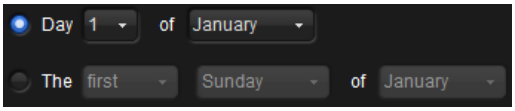
1. Open the **Properties** tabbed page of the **schedule profile** as described in Configure A Schedule.

2. At the **Recursive mode** setting, select **Yearly**.

   Some settings show onscreen, with a **yearly time table** and a few graphic buttons.



   The featured "yearly" settings are:

Setting / Graphic Button	Description
	Sets which day of a month to configure, or which day of a week of a month to configure.
yearly time table	Click a time slot or drag through multiple time slots on the **yearly time table** to select or deselect one or more time slot(s) in a year.

	▸ Click button to be able to select a time slot. ▸ Click button to be able to deselect a time slot.
	Click this button to be able to select a time slot. ▸ Click the down arrow icon to select all time slots of a year.
	Click this button to be able to deselect a time slot. ▸ Click the down arrow icon to deselect all selected time slots.
	Zooms out the **yearly time table** to bring more time slots into view.
	Zooms in the **yearly time table** to make more specific selection of time slot(s).
	Scrolls the **yearly time table** to the left.
	Scrolls the **yearly time table** to the right.

10.2.3.5.1.5. “Specific day” settings

Use the **Specific day** settings of a **schedule profile** to set how often for an event or an action to take place on a specific day of all time.

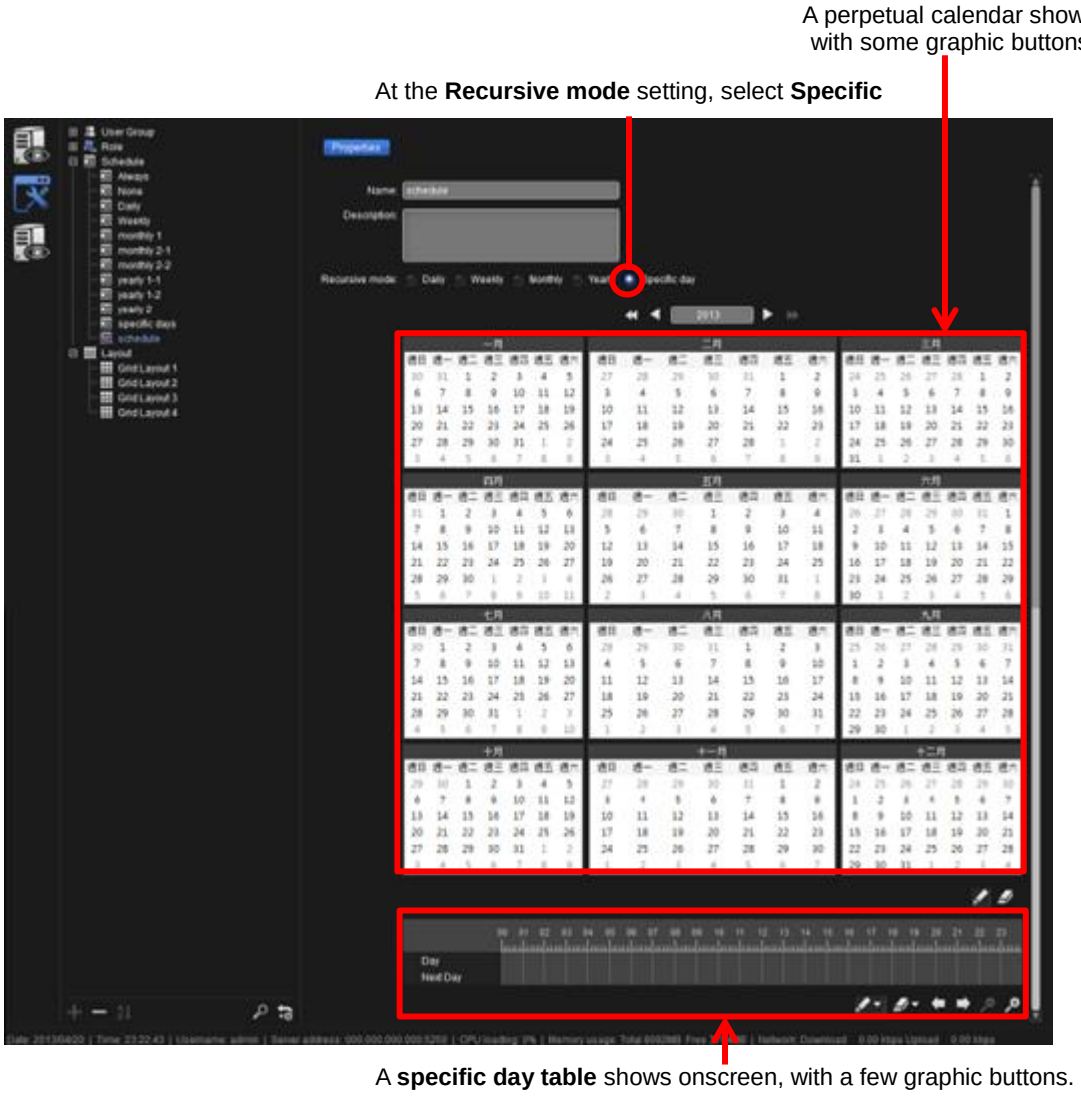
To access the **Specific day** settings of a **schedule profile**:

1. Open the **Properties** tabbed page of the **schedule profile** as described in Configure A Schedule.

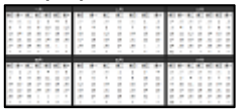
   The **Properties** tabbed page opens in the **Configuration Pane**.

2. At the **Recursive mode** setting, select **Specific day**.

A **perpetual calendar** shows onscreen, with a **specific day table** and some graphic buttons.


A perpetual calendar shows, with some graphic buttons.
At the **Recursive mode** setting, select **Specific**
A **specific day table** shows onscreen, with a few graphic buttons.

The featured settings are:

Group	Setting / Graphic Button	Description
N/A		Selects a year.
perpetual calendar	**the perpetual calendar** 	Click a date on this **perpetual calendar** to select or deselect a day. ▸ Click the button to be able to select a date. ▸ Click the button to be able to deselect a date.
		Click this button to be able to select a date on the **perpetual calendar**.
		Click this button to be able to deselect a date on the **perpetual calendar**.
specific day table	**the specific day table**	Click a time slot or drag through multiple time slots on this **specific day table** to select or deselect one or more

		time slot(s) of the date(s) selected on the **perpetual calendar**. ▸ Click the button to be able to select a time slot. ▸ Click the button to be able to deselect a time slot.
		Click this button to be able to select a time slot on the **specific day table**. ▸ Click the down arrow icon to select all time slots of the specific day.
		Click this button to be able to deselect a time slot on the **specific day table**. ▸ Click the down arrow icon to deselect all selected time slots on the specific day.
		Zooms out the **specific day table** to bring more time slots into view.
		Zooms in the **specific day table** to make more specific selection of time slot(s).
		Scrolls the **specific day table** to the left.
		Scrolls the **specific day table** to the right.

10.2.4. Layout

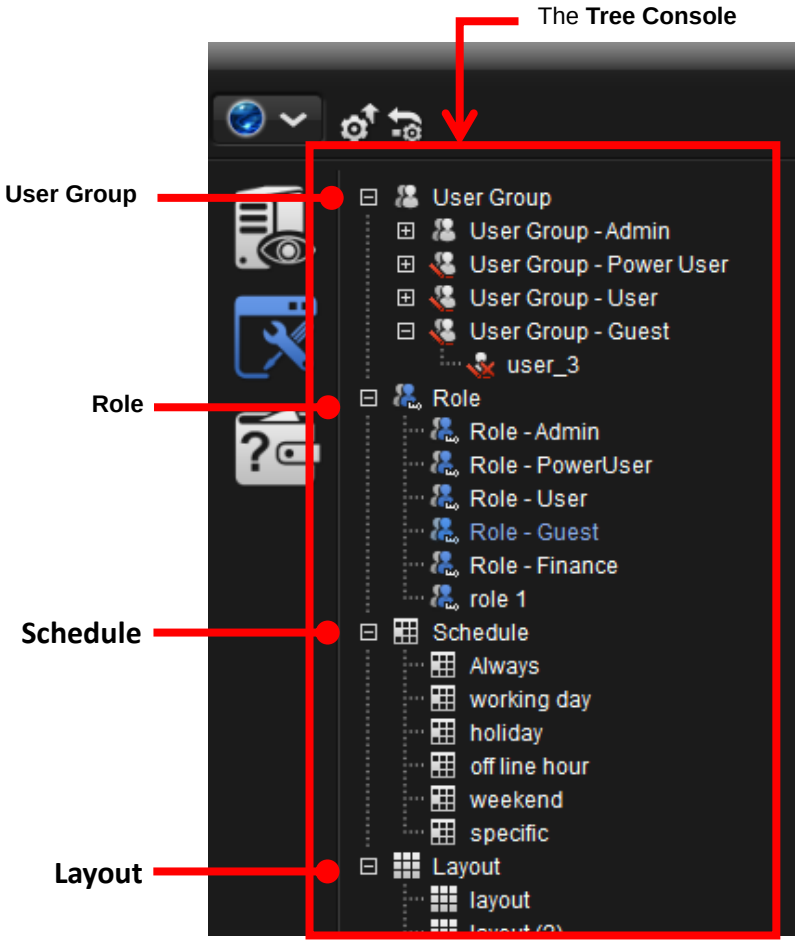
The **Layout** means to arrange the video grid that tiles together multiple video channels on a display.

10.2.4.1. The User Interface

To understand the user interface of the **Layout** group of settings:

1. Access the **System Config** (“system configuration”) as described in System Config.

   The system configuration opens onscreen, and the **Tree Console** shows four topic settings: **User Group**, **Role**, **Schedule**, and **Layout**.



All the **layouts** are subject to change and deletion. See Configure A Layout to edit a **layout**. See Delete A Layout to delete a **layout**. See Create A Layout to add a **layout**.

2. From the **Tree Console**, click the topic **Layout**.

The **Overview** tabbed page then opens at the **Configuration Pane** to deliver a general view of all the existing **layouts**.

10.2.4.2. Access Layout Settings

To access the **Layout** settings:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the topic **Layout**.

   The **Overview** tabbed page then opens at the **Configuration Pane**.

10.2.4.3. Create A Layout

To create a **layout**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** then shows the four groups of settings – **User Group**, **Role**, **Schedule** and **Layout**.

2. Click the topic **Layout**.

   The topic **Layout** becomes highlighted

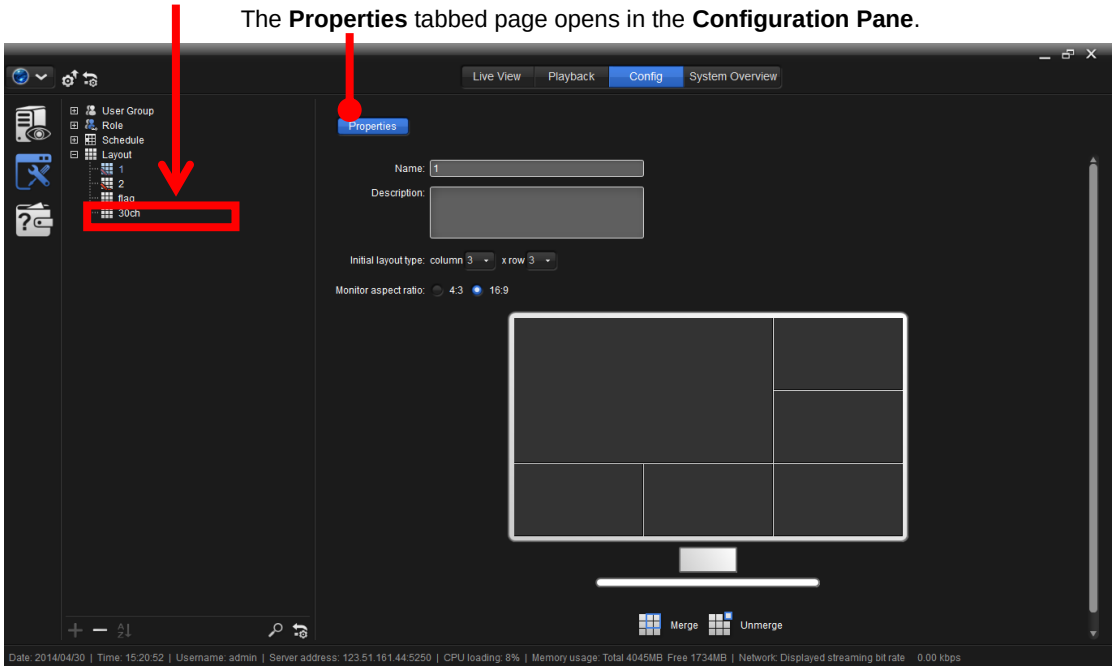
3. From the bottom of the **Tree Console**, click the add icon **+**.

   A new **layout**, named “layout” by default, will be appended to the topic **Layout**, and a **Properties** tabbed page will open in the **Configuration Pane** for users to

configure the newly created **layout**.

The new **layout** is appended to the topic **Layout**.

The **Properties** tabbed page opens in the **Configuration Pane**.



To know the settings featured on the **Properties** tabbed page, see Configure A Layout.

10.2.4.4. Delete A Layout

To delete a **layout**:

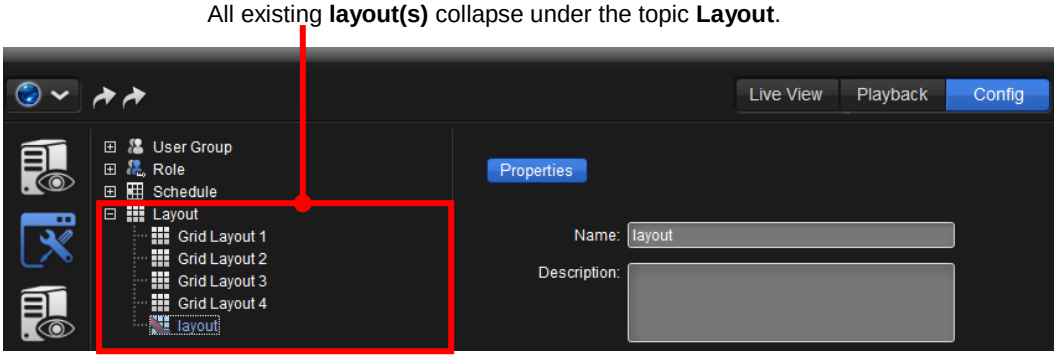
1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

   The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

2. From the **Tree Console**, click the (+) plus sign besides the topic **Layout** if there shows a (+) plus sign.

   All existing **layout(s)** then collapse under the topic **Layout**, including the software's pre-configured ones and the created ones.

All existing **layout(s)** collapse under the topic **Layout**.

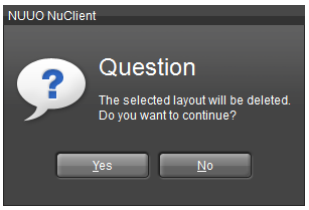


3. Click the **layout** to delete.

   The **layout** to delete becomes highlighted.

4. From the bottom of the **Tree Console**, click the delete icon —.

   A question dialog opens to ask for the confirmation of deletion.



5. Click **Yes** to confirm the deletion.

6. Click the **apply button** on the **Top Toolbar** to apply the change.

10.2.4.5. Configure A Layout

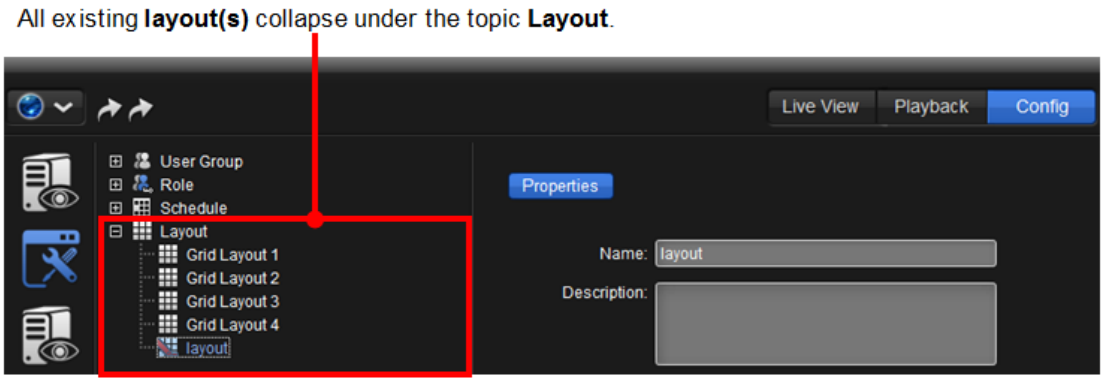
To configure an existing **layout**:

1. Run the **NuClient**. Click the **Config** tab from the **Top Toolbar**. Then click the **System Config** icon from the **Config Catalog**.

The **Tree Console** shows four groups of settings: **User Group**, **Role**, **Schedule**, and **Layout**.

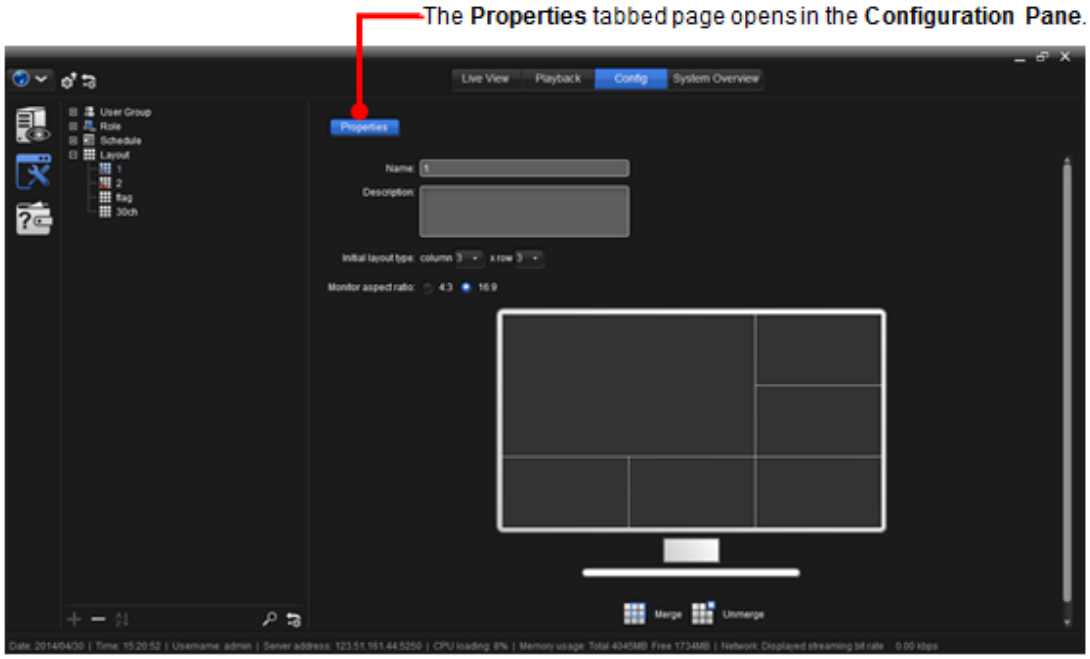
2. From the **Tree Console**, click the (+) plus sign besides the topic **Layout** if there shows a (+) plus sign.

   All existing **layout(s)** then collapse under the topic **Layout**, including the software's pre-configured **layouts** and the created ones.



3. Click the **layout** to configure.

   The **Properties** tabbed page of the **layout** to configure then opens at the **Configuration Pane**.



   The featured settings on the **Properties** tabbed page are:

Setting	Description	Default
Name	Names the **layout**.	"layout"
Description	Provides a brief description for this **layout** for the easier identification of it.	--
Initial layout type	Sets the **grid layout** by assigning the amount of column(s) and the amount of row(s). ▸ 1 to 10 columns are configurable. ▸ 1 to 10 rows are configurable.	3 columns & 3 rows
Monitor aspect ratio	Sets the aspect ratio of the display. ▸ Options available are 4:3 and 16:9.	4:3
Merge	Merges the cells selected in the video grid. ▸ Click and drag a cell to select it.	--
Unmerge	Restores the merged cells selected in the video grid. ▸ Click and drag a cell to select it.	--

11 System Overview

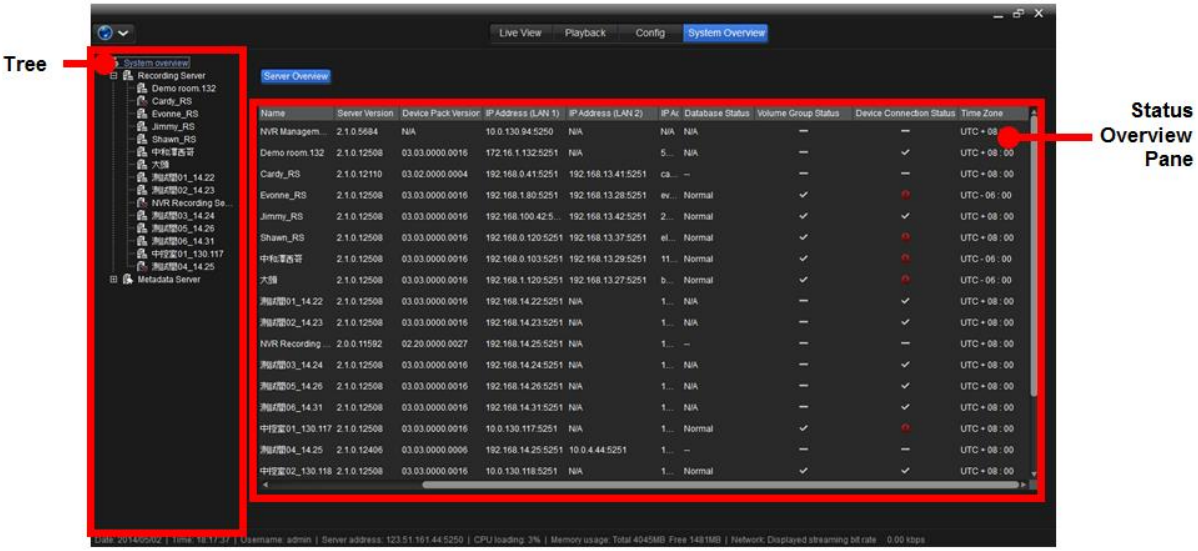
To open the **NuClient**'s **System Overview** screen, click the **System Overview** tab from the **Top Toolbar**.

In System Overview tab, you may see real-time system information including all servers, cameras, 3rd party devices, and IO devices.

The first layer indicates System Overview, including the status of all Recording Servers, Recording Failover Servers, and Metadata Servers in the system.
The second layer indicates Recording Server and Metadata Server device status, including video devices, IO devices and 3rd party devices status.

11.1 System Overview

On System Overview, the status of all Recording Servers, Recording Failover Servers, and Metadata Servers in the system will be displayed.



The following item will display on the column.

Item	Description
Connection Status	The connection status between the **Recording Server, Recording Failover Server or the Metadata Sever** to the **Management Server**.
Server Type	The type of the server. ▸ Include **Management Server**, **Recording Server**, **Recording Failover Server** and **Metadata Sever**.
Name	The name of the server.
Server Version	The firmware version of the server.
Device Pack Version	The device pack of the server. (Only Recording Server and Recording Failover Server will display the information.)
IP Address(LAN1)	The LAN 1 IP address of the server.
IP Address(LAN2)	The LAN 2 IP address of the server.
IP Address(WAN)	The WAN IP address of the server.
Database Status	The status of the Recording database. (Only Recording Server and Recording Failover Server will display the information.)
Volume Group Status	The status of the all Volume Groups from the server. (Only Recording Server and Recording Failover Server will display the information.)
Device Connection Status	The status of the all devices connected to the server.
Time Zone	The time zone setting of the server.

11.1.1 Graphic Icon on System Overview page

The following icon will display on System Server Overview status column.

Item	Graphic icon	Description

Title bar		To filter what information to display on the column.
Connection status		The Recording Server or Metadata server is connected with Management Server.
		The Recording Server or Metadata server is disconnected with Management Server.
		Simulation mode ▸ To test Failover Server setting, the system is simulating the situation that Recording Server disconnect with Management Sever.
Volume Group Status		All Volume Group from the Recording Server operates normally.
		One or multiple Volume Group(s) from the Recording Server operates abnormally.
		N/A ▸ The possible reason is, Server is not connected, or Volume Group is not supported(Management Server and Metadata Server)
Device connection status		All devices is connected
		One or multiple device(s) are disconnected
		N/A ▸ The possible reason is, server is not connected, or devices status is not supported (Management Server).

11.2 Recording Server

On Recording Server page, it shows the status of all devices belonging to the Recording Server, including video devices and IO devices.

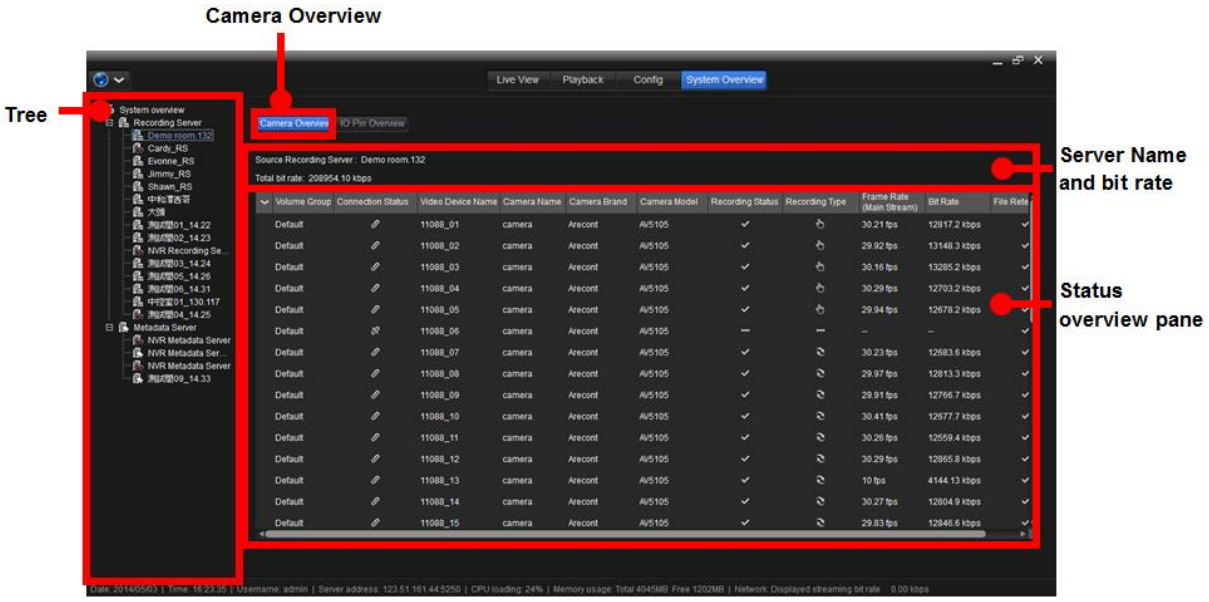
If the NuClient is not connected to the Recording Server, the information will display N/A because NuClient can't get information from Recording Server.

11.2.1 Camera Overview

To view the status of video devices from the **Recording Server**:

1. From the **Tree Console** of System Overview, click the topic **Recording Server**.

   By default, the **Camera Overview** tabbed page then opens at the **Status Overview Pane**.



The following item will display on the column.

Item	Description
Volume Group	The volume group that the video device belonging to.
Connection Status	The connection status between the **Recording Server** and **Video Devices.**
Video Device Name	The name of the video device.
Camera Name	The user-defined name of the camera.
Camera Brand	The brand name of the camera.
Camera Model	The model name of the camera.
Recording Status	The recording status of the camera, including “Recording”, “Not Record”, and “Unknown”(can’t get information).
Recording Type	The recording type of the camera, including “Manual”, “Always”, ”Boosting”, “Event” record.
Frame Rate(Main Stream)	The main stream frame rate of the camera.
Bit rate	The main stream bit rate of the camera.
File Retained	The recording data retention status of the camera, including “Normal”, “Abnormal”, and “Unknown”.

The following icon will display on Recording Server – **Camera Overview** status column.

Item	Graphic icon	Description
Title bar		To filter what information to display on the column.
		Connected

Connection status		Simulating failover
		Disconnected
		N/A ▸ The possible reason is, the server is not connected or NuClient is not connected to the Recording Server.
Recording status		Recording
		Not record
		N/A ▸ The possible reason is, the device is not connected or NuClient is not connected to the Recording Server.
Recording Type		Always Record
		Event Record
		Boosting Record
		Disable Record
		Manual Record
		N/A (ex. Not connected)
File Retained		Normal
		Abnormal

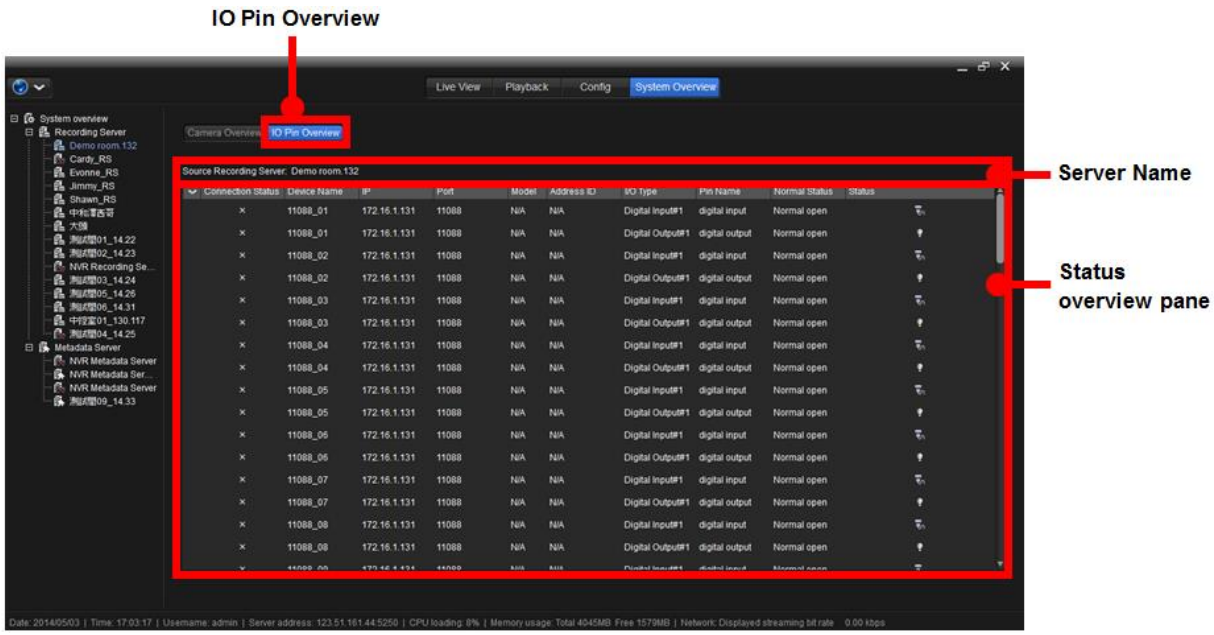
11.2.1 IO Pin Overview

To view the status of IO devices from the **Recording Server**:

1. From the **Tree Console** of System Overview, click the topic **Recording Server**.

   By default, the **Camera Overview** tabbed page then opens at the **Status Overview Pane**.

2. Go to IO Pin Overview tabbed page, the status overview of IO devices displays:



The following item will display on the column.

Item	Description
Connection Status	The connection status between the **Recording Server** and **IO pin.** ▸ Only IO device supports connection status information.
Device Name	The name of the device, including the video device name with digital input/digital, and the name of IO devices.
IP	The IP setting of the IO devices.
Port	The Port setting of the IO devices.
Model	The model name of the IO devices, including “SCB-C31+SCB-C24”, “SCB-C31+SCB-C26”, “SCB-C31+SCB-C28”, “SCB-C31+SCB-C08”.
Address ID	The Address ID setting of the IO devices.
I/O Type	The type of the IO devices, including Digital Input and Digital Output.
Pin Name	The Pin setting of the IO devices.
Normal Status	The normal status of the IO devices, including “Normal On” and “Normal Off”.
Status	The trigger status of the IO devices, including “On”, and “Off”.

The following icon will display on Recording Server – **IO Pin Overview** status column

Item	Graphic icon	Description
Title bar		To filter what information to display on the column.
Connection status		The IO device is connected.
		The IO device is disconnected.
		N/A ▸ The possible reason is, get the device connection status is not supported.

Trigger status		On, the DI/DO is triggered
		Off, the DI/DO is not triggered

11.3 Metadata Server

On Metadata Server page, it shows the status of all devices belonging to the Metadata Server, including video devices and IO devices.

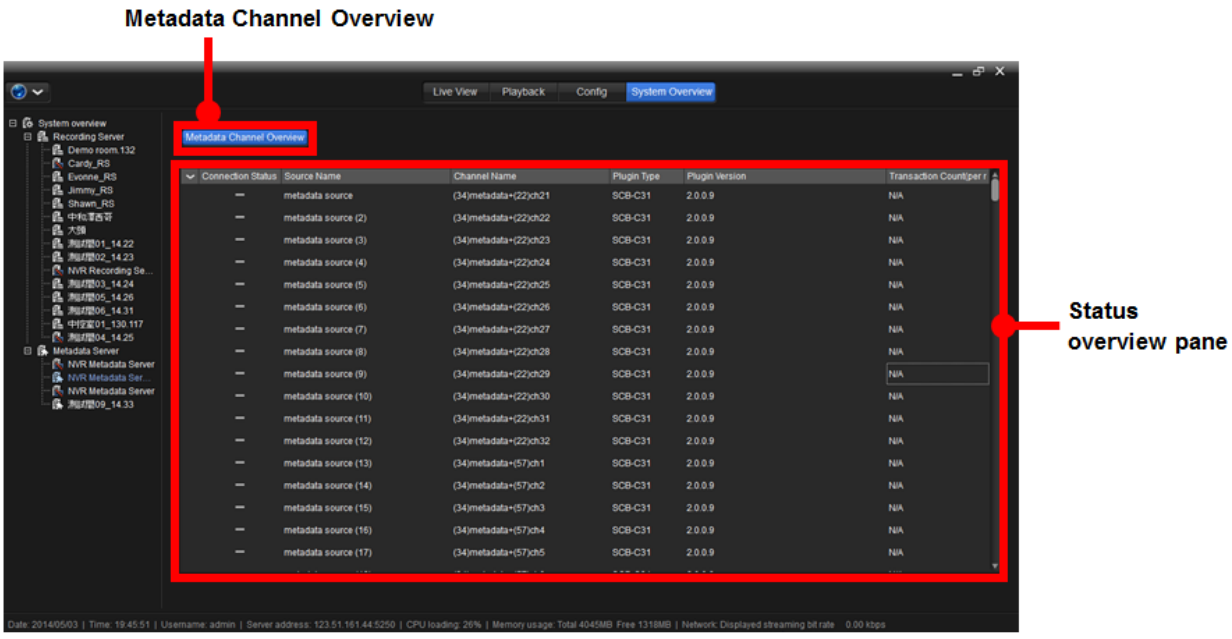
	If the NuClient is not connected to the Metadata Server, the information will display N/A because NuClient can't get information from Recording Server.

11.3.1 Metadata Channel Overview

To view the status of 3rd party devices from the **Metadata Server**:

1. From the **Tree Console** of System Overview, click the topic **Metadata Server**.

   By default, the **Metadata Channel Overview** tabbed page then opens at the **Status Overview Pane**.



The following item will display on the column.

Item	Description
Connection Status	The connection status between the **Metadata Server** and **Metadata Source.** ▸ Only IO device supports connection status information.
Source Name	The name of the metadata source.
Channel Name	The name of the metadata channel.
Plugin Type	The type of the plugin that the device belonging to.
Plugin Version	The version of the plugin that the device belonging to.
Transaction Count (per minute)	The transaction count statistic per minute of the metadata channel.

The following icon will display on Metadata Server – **Metadata Channel Overview** status column.

Item	Graphic icon	Description
Title bar		To filter what information to display on the column.
Connection status		The metadata source is connected
		The metadata source is disconnected.
		N/A ▸ The possible reason is, the server is not connected or NuClient is not connected to the Recording Server.

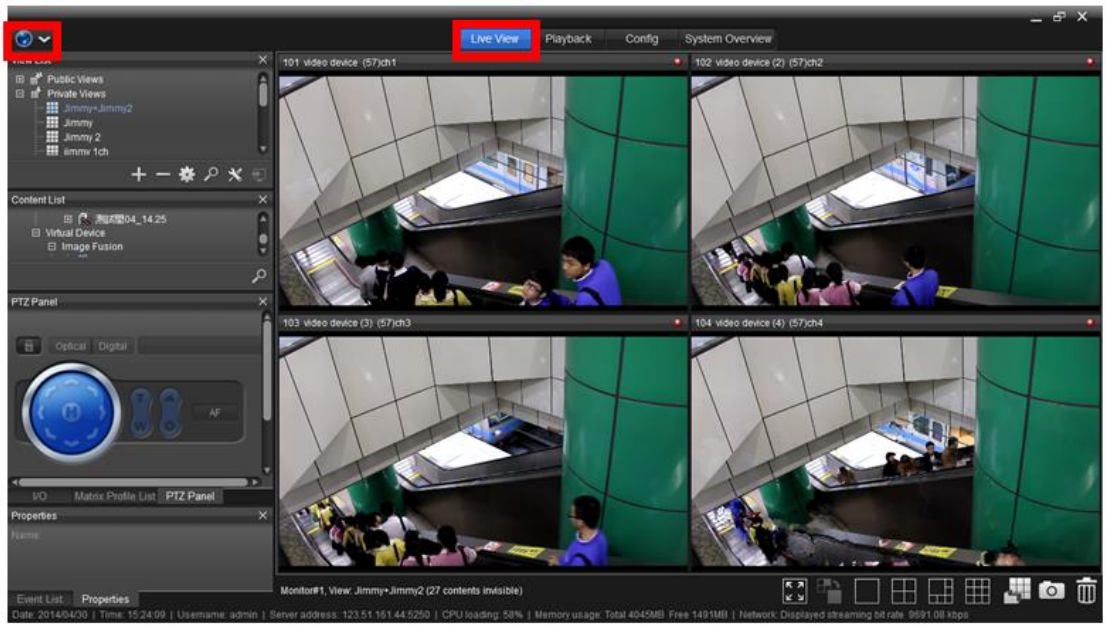
12 Application Configuration

12.1 Image Fusion

The **Image Fusion Technology** allows a seamless panoramic view of multiple camera videos by changing their viewing angles and image sizes. Up to 10 independent cameras can be set up as single view.

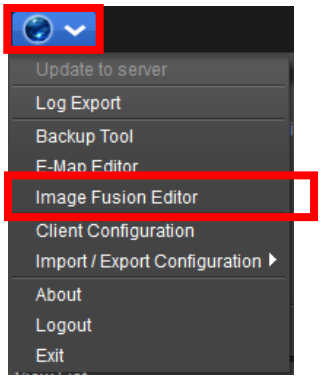
To launch the **Image Fusion Editor**:

1. Access the **Live View** tab.



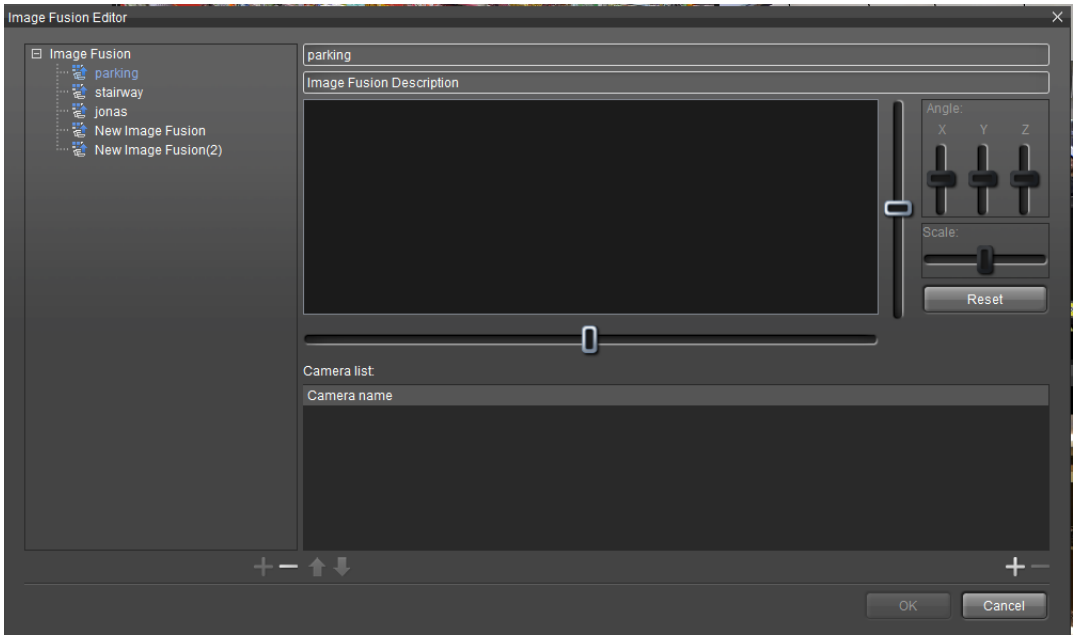
2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .

   The menu opens.



3. Click the **Image Fusion Editor**.

   The **Image Fusion Editor** launches.



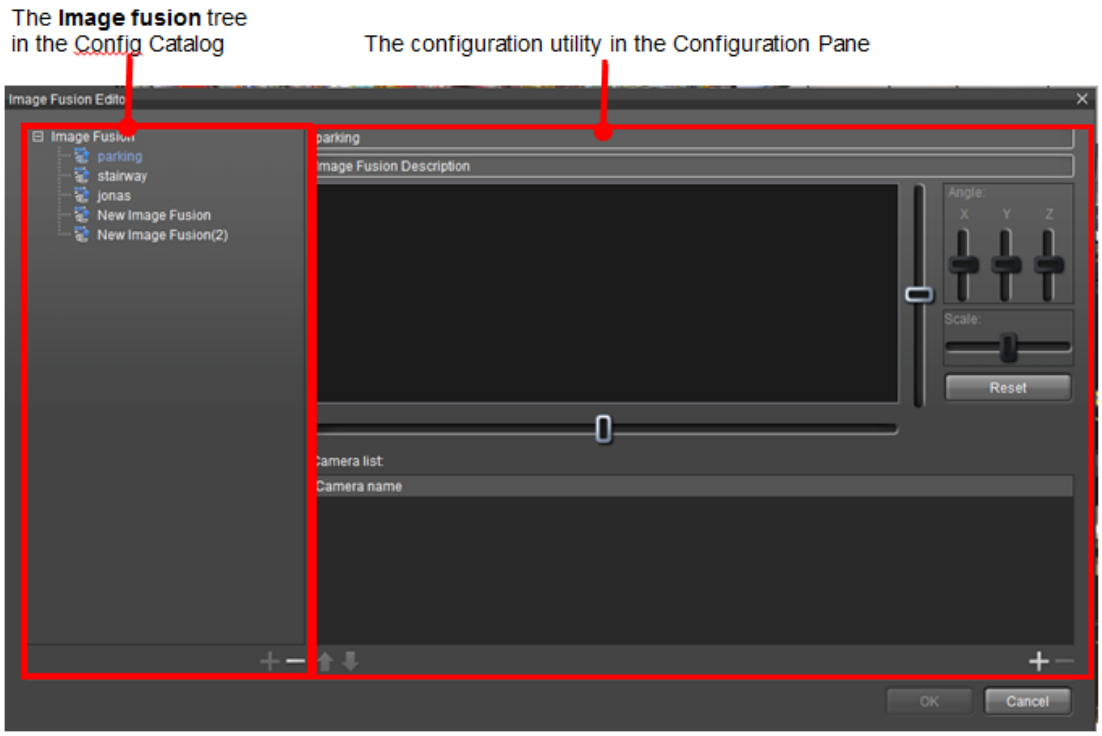
In the **Image Fusion Editor** window, the Config Catalog shows a list of the existing **image fusions**. The right side shows the configuration utility and the list of available cameras.

12.1.1. Create an Image Fusion

To create an **image fusion**:

1. Launch the **Image Fusion** as described in Image Fusion Editor.

   The **Image Fusion Editor** launches, with the existing **image fusion(s)** listed in the **Image Fusion** tree.

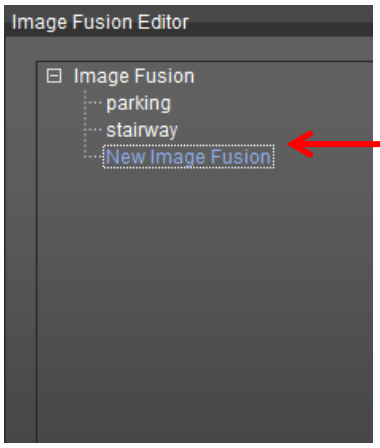


2. In the **Image Fusion** tree, click the node **Image fusion**.

   The **Image fusion** node becomes highlighted.

3. Click the add sign icon + in the lower-right of the **Image fusion** box.

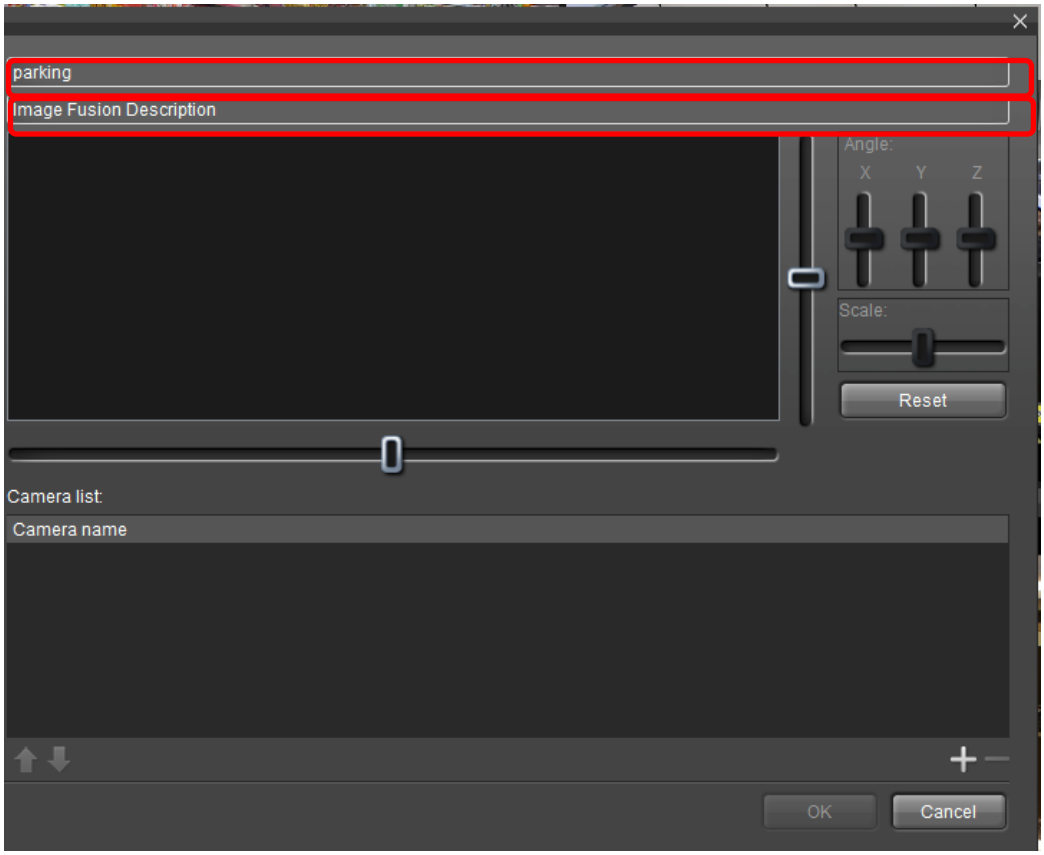
   A new **image fusion** named “New Image Fusion” by default is appended to the **image fusion** tree.



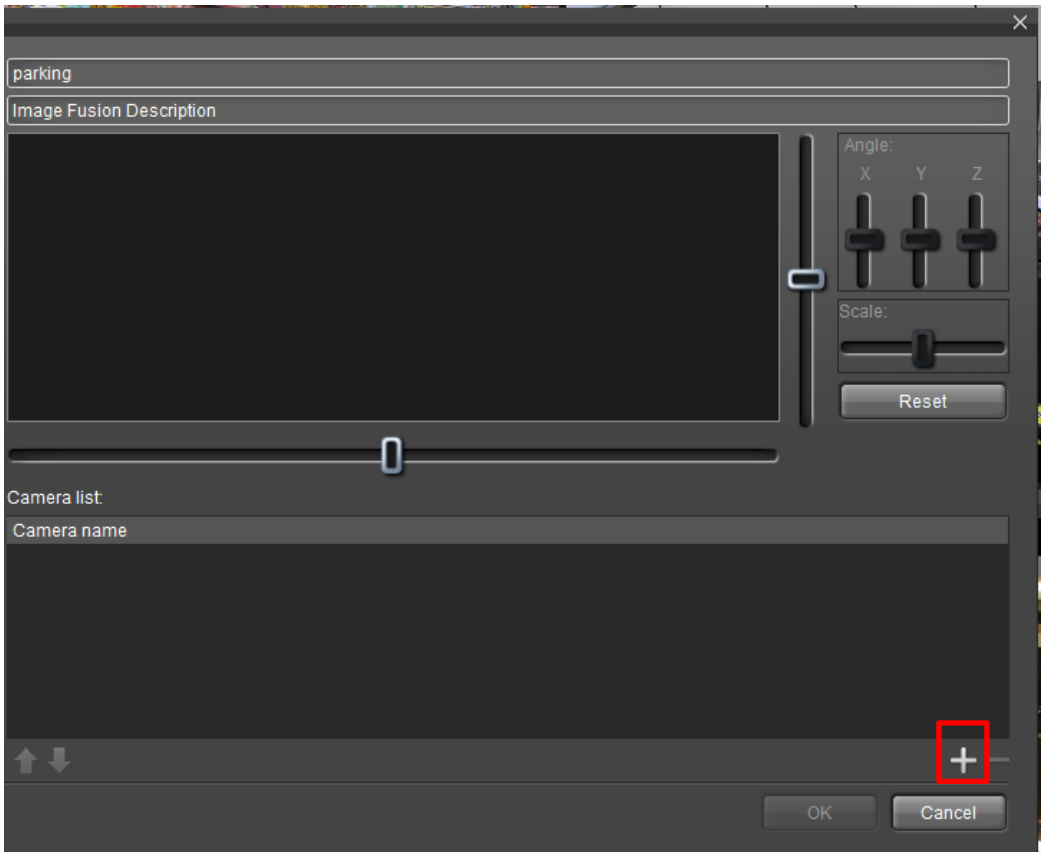
A new **image fusion** named “New Image Fusion” by default is appended to the **image fusion** tree

4. Click on the name of the newly created **image fusion**.

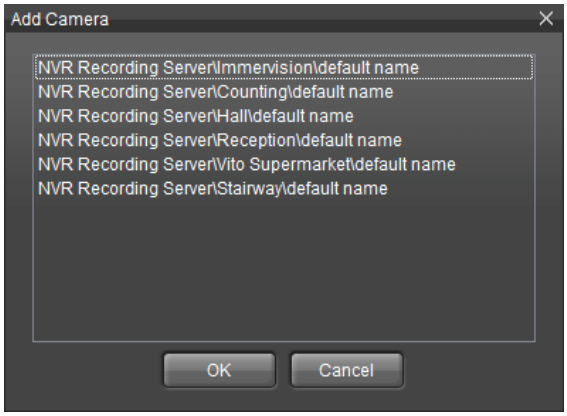
   On the Configuration Pane, change the name and enter a brief description about the panorama.



5. Click the add sign icon + at the lower-right.

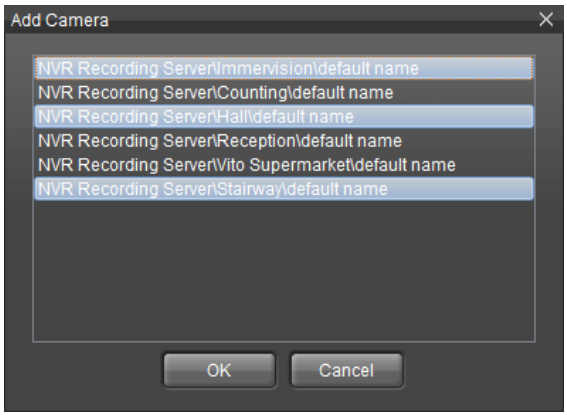


An **Add Camera** window opens.

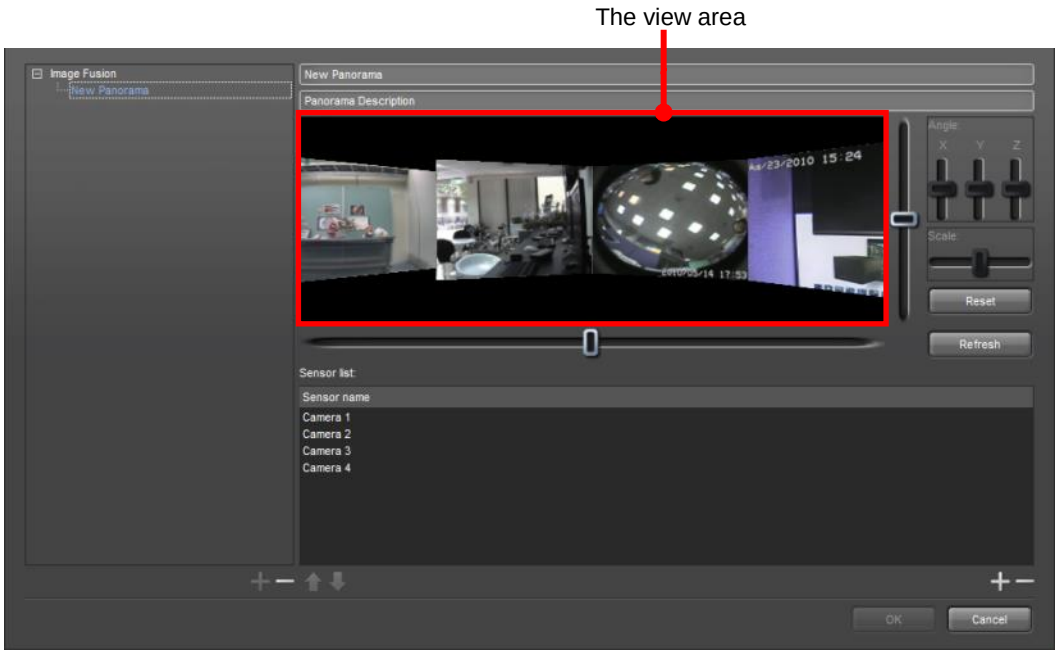


6. Select the cameras to add to the **image fusion**.

   The selected cameras become highlighted.

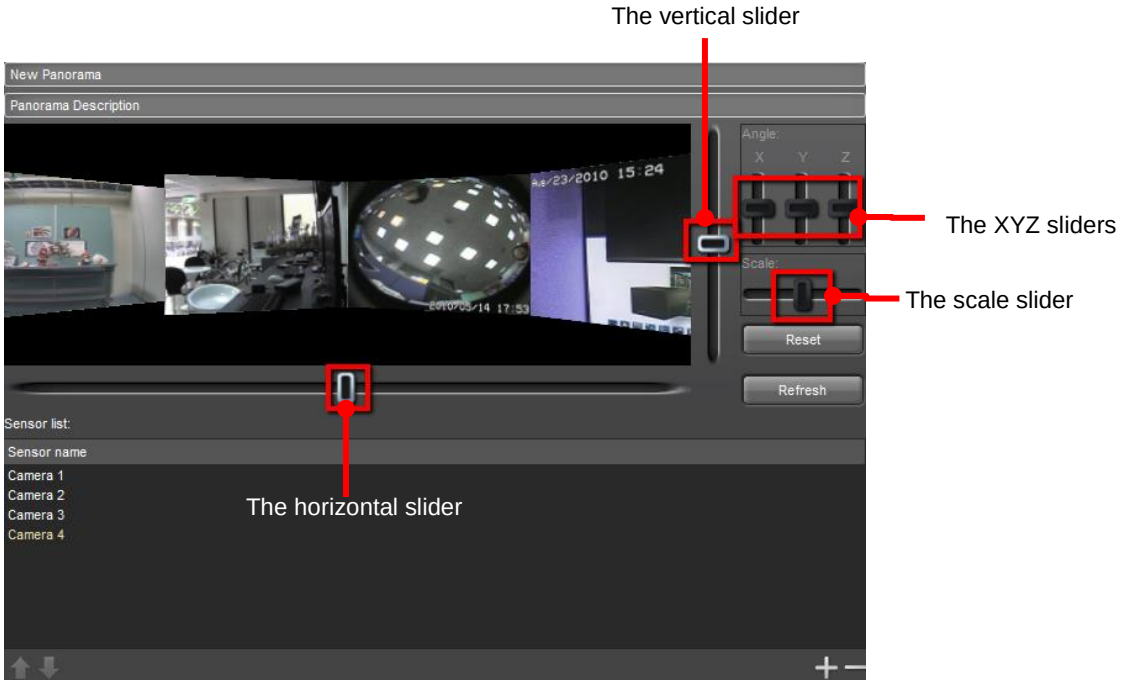


The added camera images are stitched together in the view area at the upper part of the **Image Fusion Editor** window.



7. Adjust orientation of each image of the image fusion if you want to.

   Use the horizontal and vertical sliders at the right side and bottom side of the view area to control the viewport of the **image fusion**. Use the XYZ sliders to adjust the angles of an image. Use the scale slider to enlarge or shrink an image.

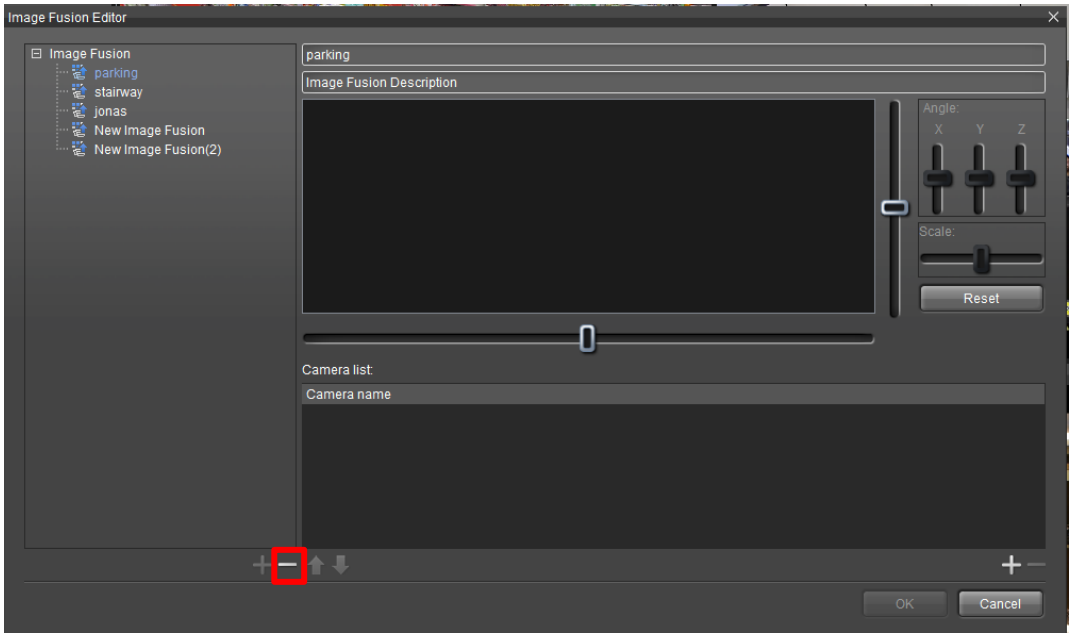


8. Click the **OK** button and apply the change.

12.1.2 Delete An Image Fusion

1. Launch the **Image Fusion** as described in Image Fusion Editor.

2. In the **Image Fusion** group box, click the delete icon − to delete an Image Fusion.



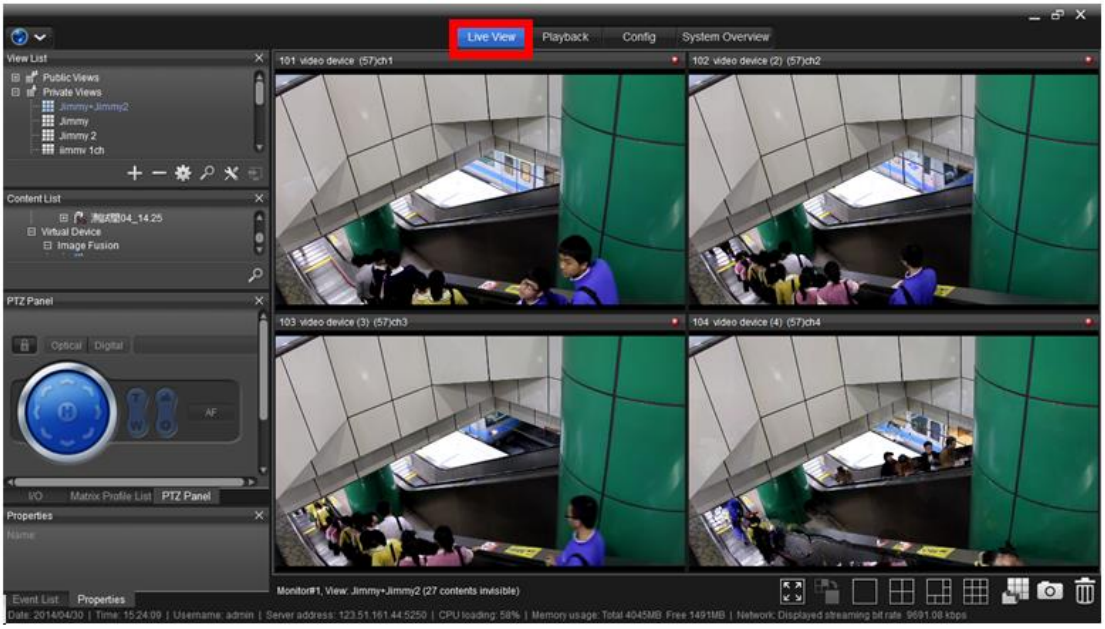
3. Click the **OK** button and apply the change.

12.2 E-Map

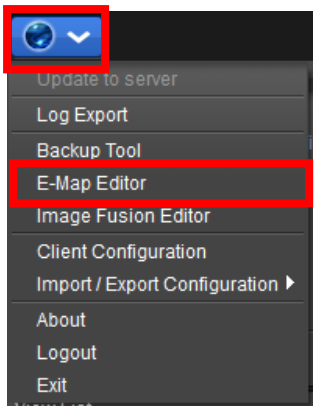
E-map is a graphic image to be overlaid with the icons including Recording Server, video devices, cameras and I/O devices, Metadata Server, Metadata source, and Metadata a Channel, so administrators are able to know where a device is located and also the layout of all the devices. Such graphic image can be a street map, a floor plan, or any other custom image file.

To launch the **E-Map Editor**:

1. Access the **Live View** tab.



2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .
   The menu opens.



3. Click **E-Map Editor**.

4. An E-Map Editor window opens.

The featured settings are:

Group box / Setting	Description	
E-Map group box	+	Adds an E-map.
	−	Deletes a selected E-map.
New Map field	Assigns the name for the E-map.	
Map Description field	Provides a brief description of the E-map.	
[Select a map image file] field	Click the ellipsis (…) button to open an explorer window to browser for the graphic image. 1. The acceptable file formats are PNG, BMP, and JPEG. 2. The maximum file size allowed is 2MB.	
NVR Management Server	Expand the tree menu. Click and drag a desired camera or I/O device	

group box	onto the graphic image and drop it where the device is installed on the image.

12.2.1. Create an E-Map

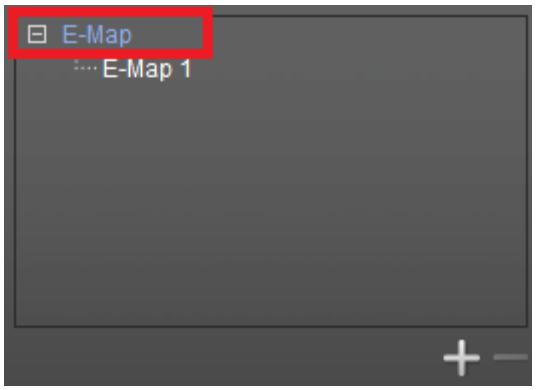
To create an **E-map**:

1. Launch the **E-map Editor** as described in E-Map Editor.

   The **E-Map Editor** launches, with the existing E-maps listed in the **E-Map** group box at the upper-left, the **Management Server** tree menu in the lower-left, and the graphic image displays in the right.

2. In the **E-Map** group box, click the add sign icon + to add a new E-map to.

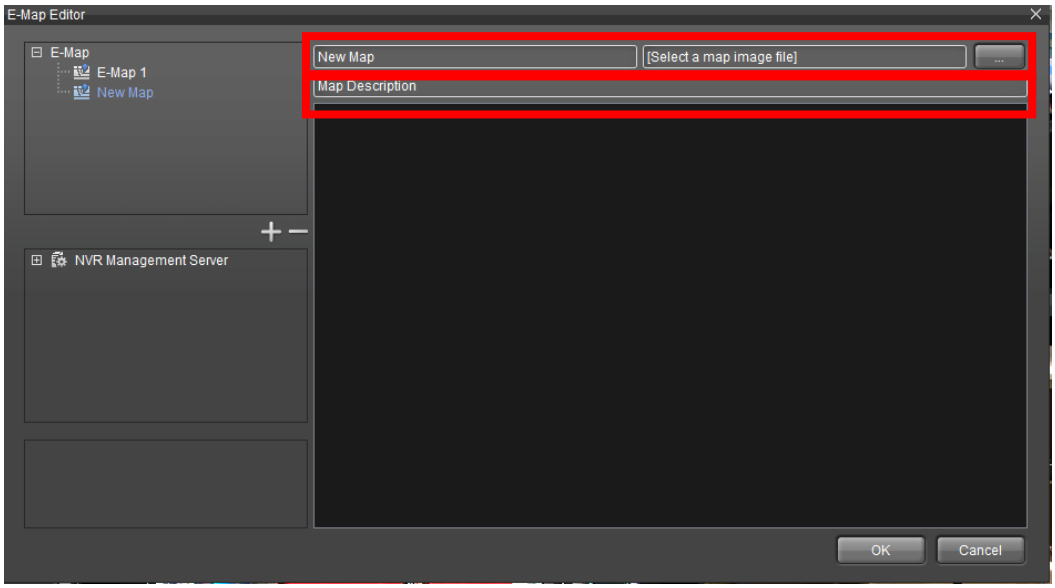
   The root to be added with a new E-map then becomes highlighted.



The root to be added with a new E-map becomes highlighted.

3. Click the add sign icon + at the bottom-right corner of the **E-Map** group box.

   A new E-map named “New Map” by default is appended to the root.

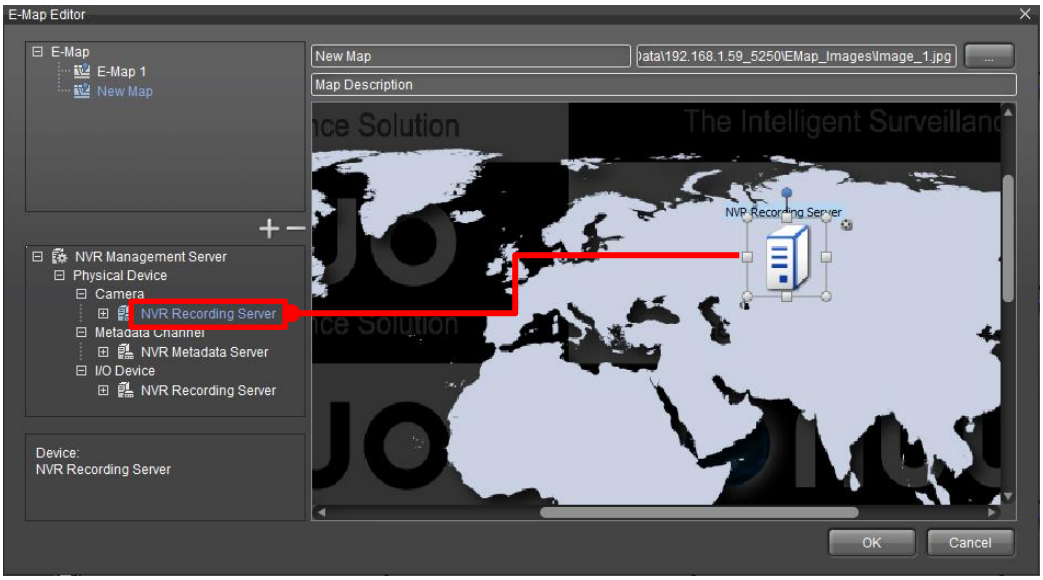


4. Enter the name and a brief description for the new E-map. And click the ellipsis (…) button to open an explorer window to browser for the graphic image.

	The acceptable file formats are **PNG**, **BMP**, and **JPEG**. The maximum file size allowed is 2MB.

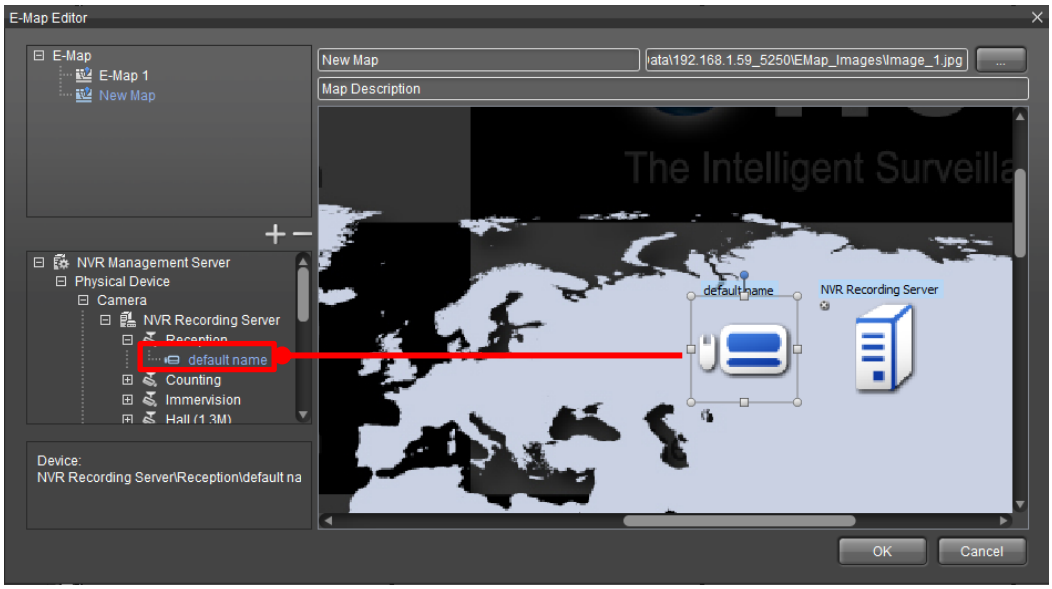
   An image file is added. Scroll the mouse wheel to zoom in and out the map image.

5. From the **NVR Management Server** tree menu, drag a server on to the map.

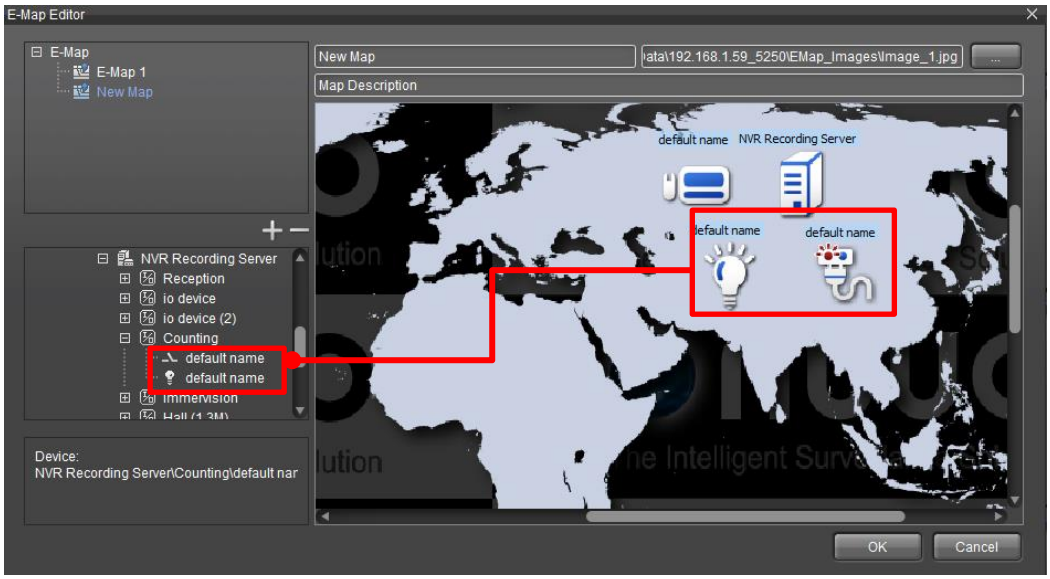


	The icons should all be placed on the area of an image and cannot be placed on the black area surrounding an image when you zoom out.

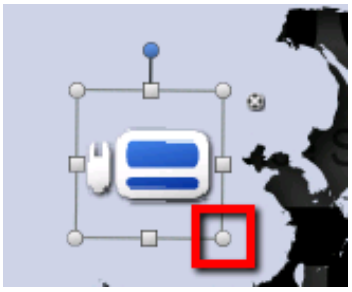
6. Drag a camera onto the map.



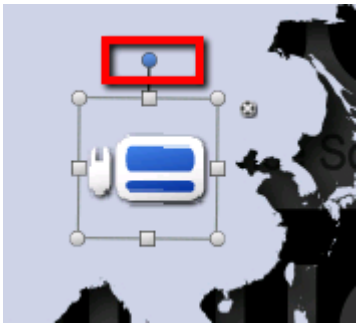
7. Drag an I/O device onto the map.



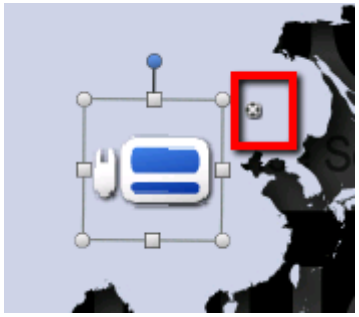
8. Adjust the size by dragging the edge points of an icon.



Drag and rotate the blue point to rotate an icon.



Click on the **x** icon to delete an icon.



To delete multiple icons at one time, select multiple icons and drag them to the trash can in the corner.

9. Click the **OK** button and apply the change.

12.2.2 Delete an E-Map

To delete an **E-map**:

1 Launch the **E-map Editor** as described in E-Map Editor.

2 In the **E-Map** group box, click the delete icon − to delete an E-map.

3. Click the **OK** button and apply the change.

12.3 View

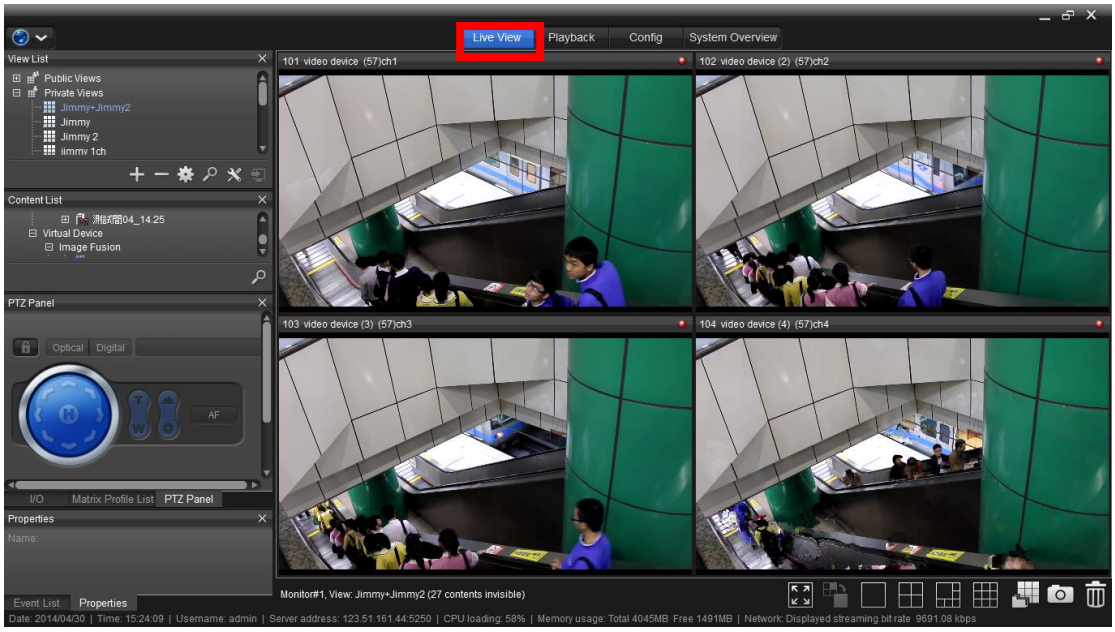
A view is the configuration of how you arrange video content in the view area, video stream settings, and the grid layout. Views can be categorized into Public View and Private View. Public Views are configured by the users who have the editing permission on the server and can be viewed by any users. Private views are visible only to who add them.

The comparison between Public View and Private View:

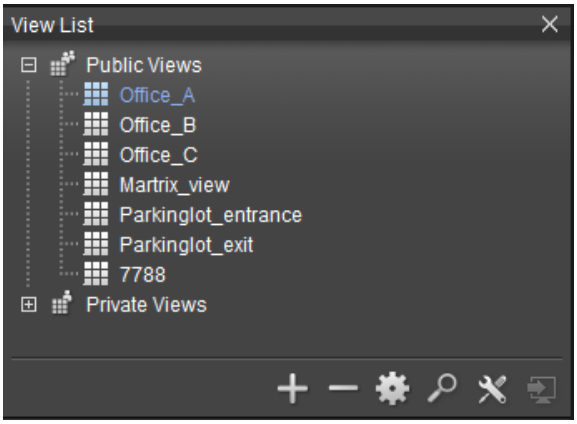
Setting	Description
Public View	The users with edit privilege of the server. Everyone can view.
Private View	Only available to the user who created the view.

To launch the **View**:

1. Access the **Live View** tab.



2. Click the **View list**



The featured settings are:

Setting	Description
	Add view/group/view tour
	Delete view/group/view tour
	Configure view/group/view tour
	Search
	Switch stream profile

	Send view/group/view tour to a secondary monitor when available

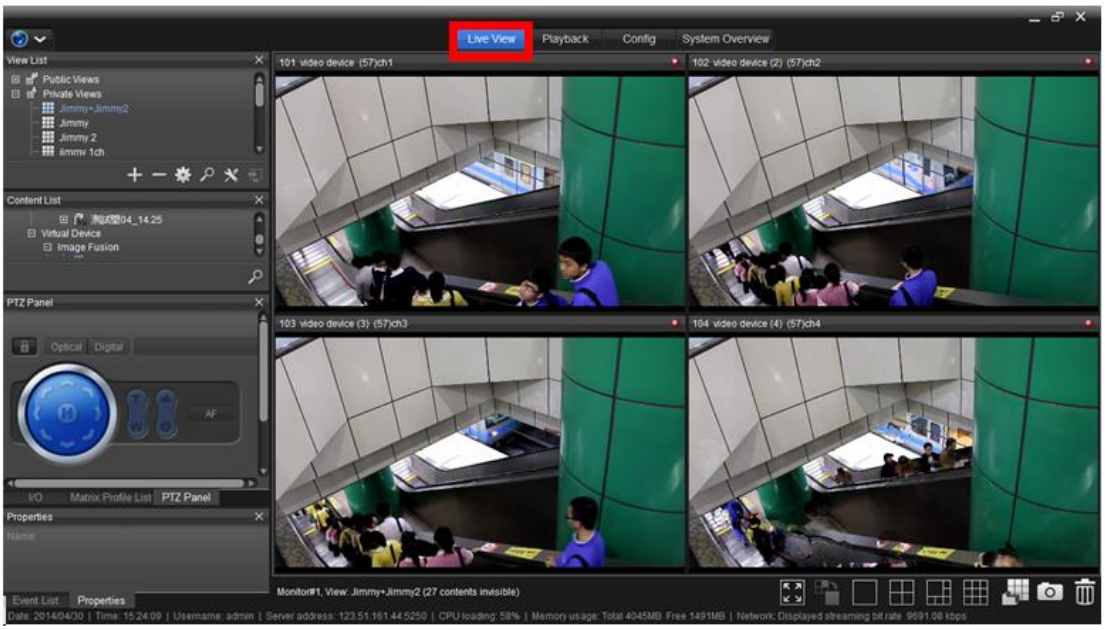
	Live View can be displayed both in the primary monitor and in secondary monitors, but Playback can open only in the primary monitor.

12.3.1 Add A View

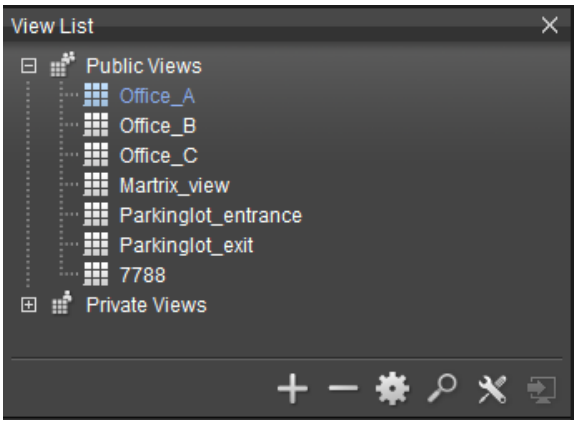
A view is the configuration of how you arrange video content in the view area, video stream settings, and the grid layout.

To launch the **View**:

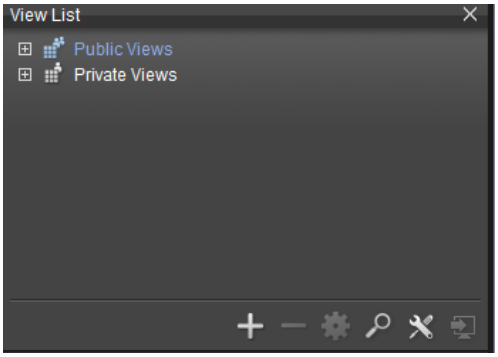
1. Access the **Live View** tab.



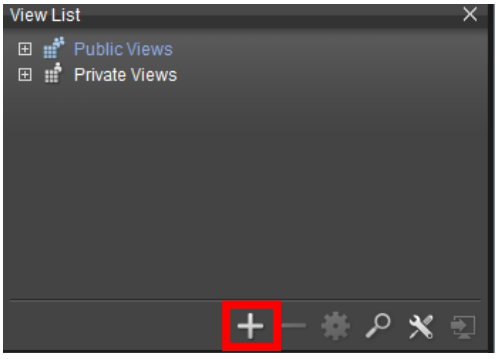
2. Click the **View list**



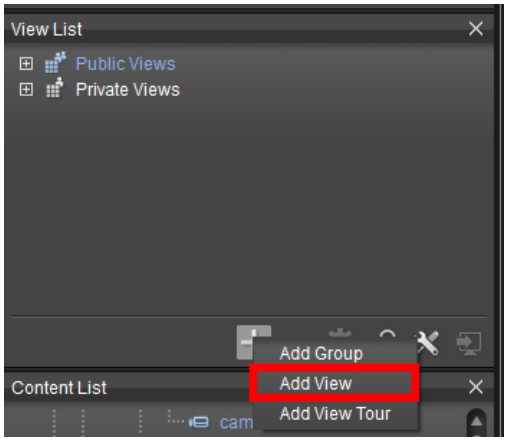
3. Select the type of view, either Public or Private, to be created.



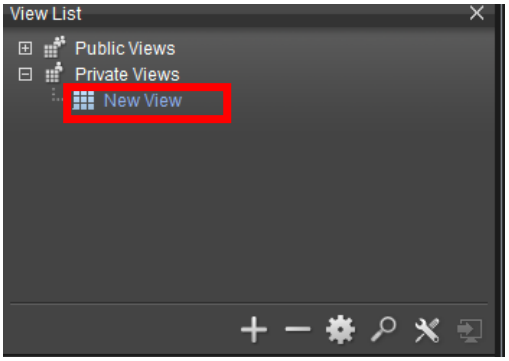
4. Click on the add sign icon **+**.



5. Click on **Add View**.



6. A new view named “New View” by default is appended to the root.

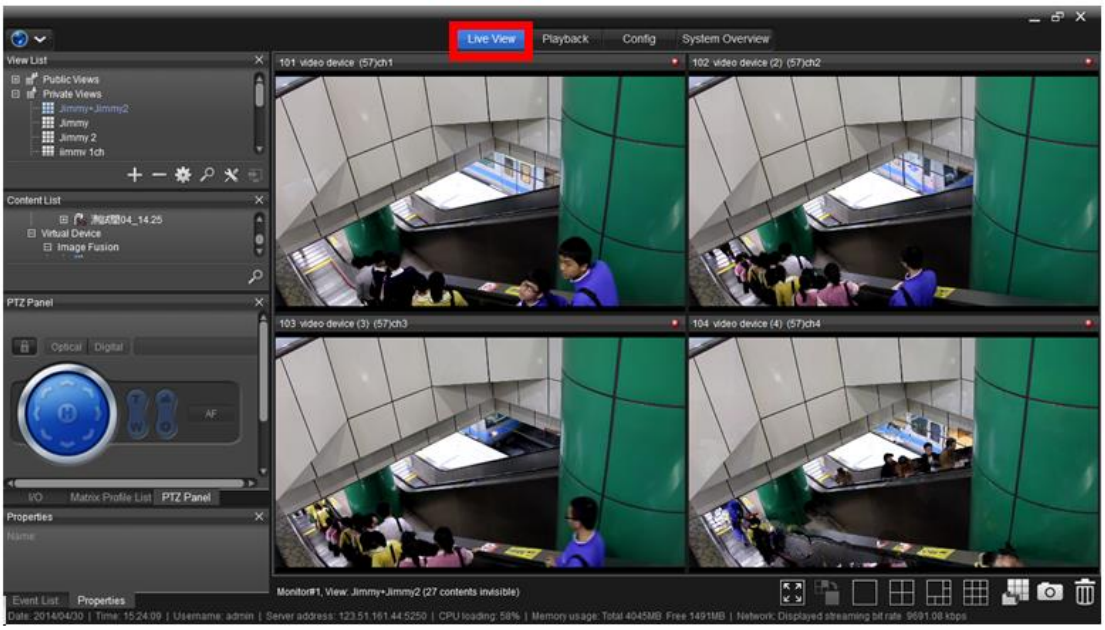


	When you modify the content in View List, a modification icon will come with modified items. Any modification is not saved to remote servers until you upload it.

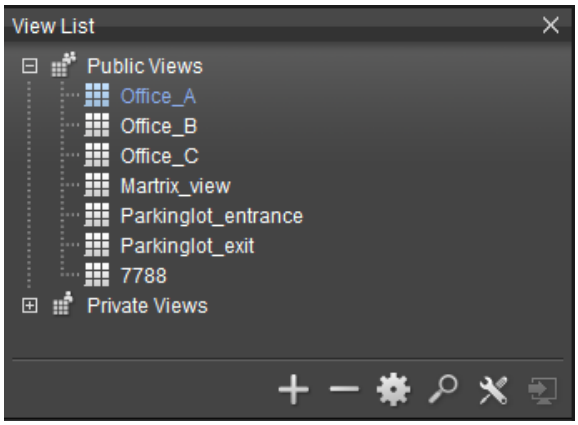
12.3.2 Add Cameras to View

To launch the **View**:

1. Access the **Live View** tab.



2. Click the **View list** you want to edit.

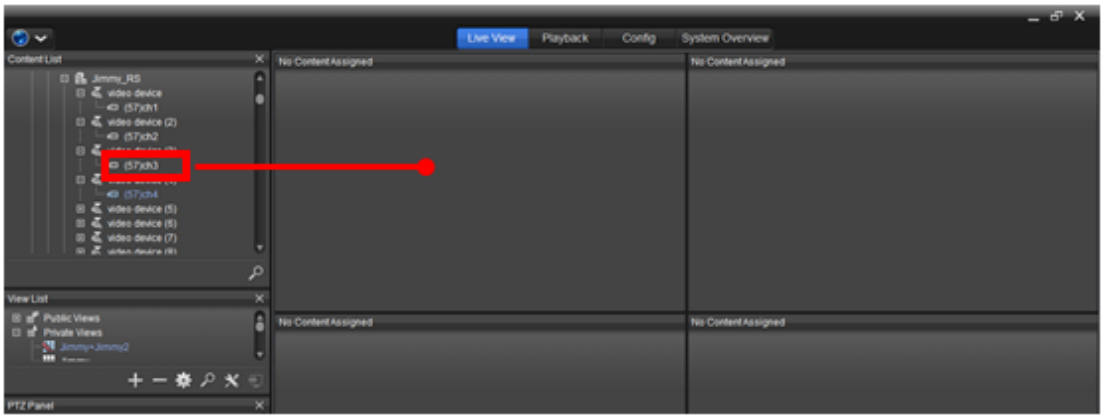


3. Click Content list.

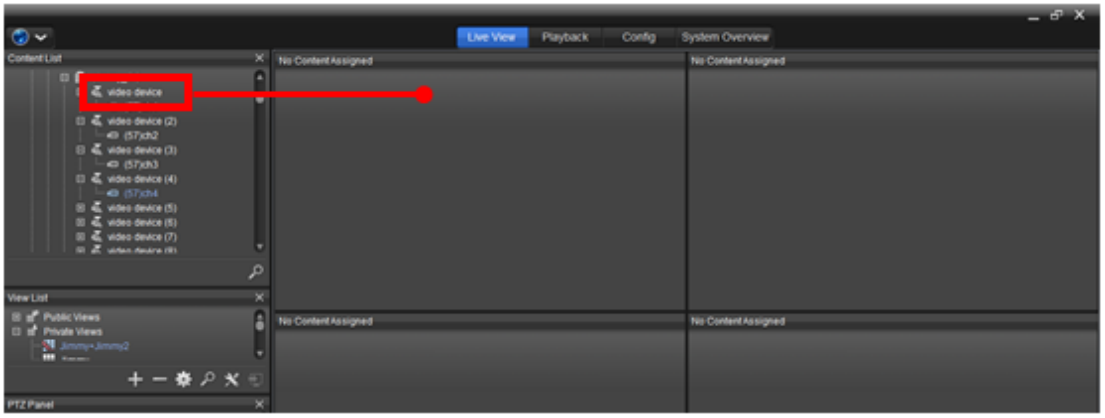
   Drag and drop a single camera or a sensor to a grid cell.

   OR

   Drag and drop a server to a grid cell.
   Then the camera's video will show in the cell.



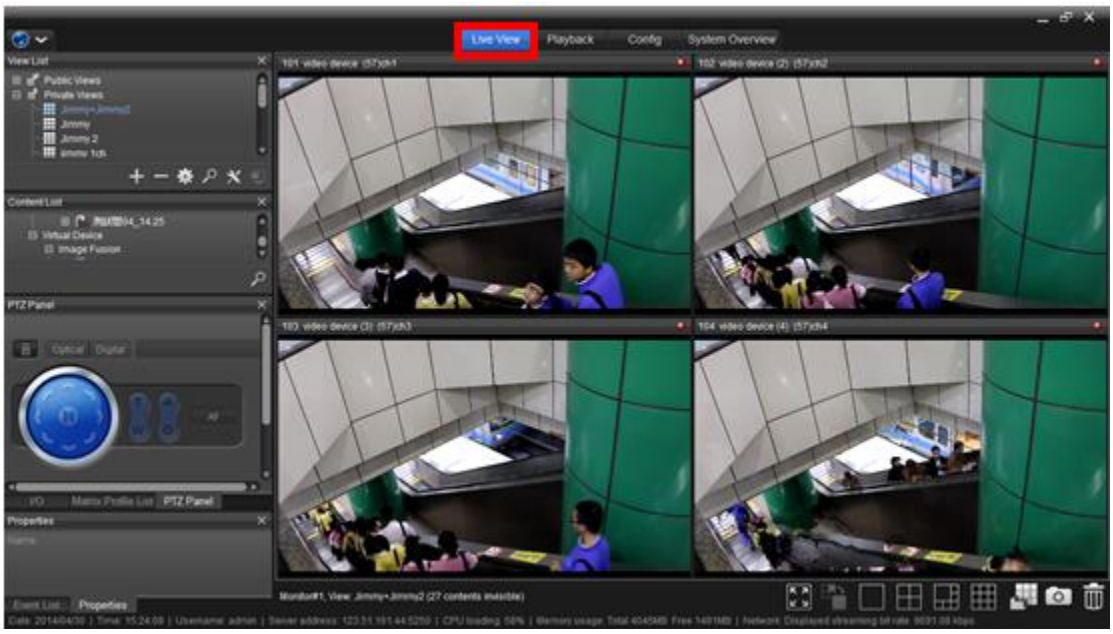
4. Drag a server to the grid, cameras will fill up in the view area until no grid cells are available to display more video streams.



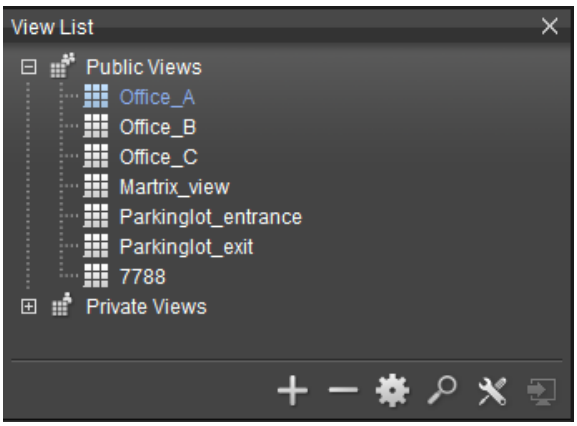
12.3.3 Delete a Camera from View

To launch the **View**:

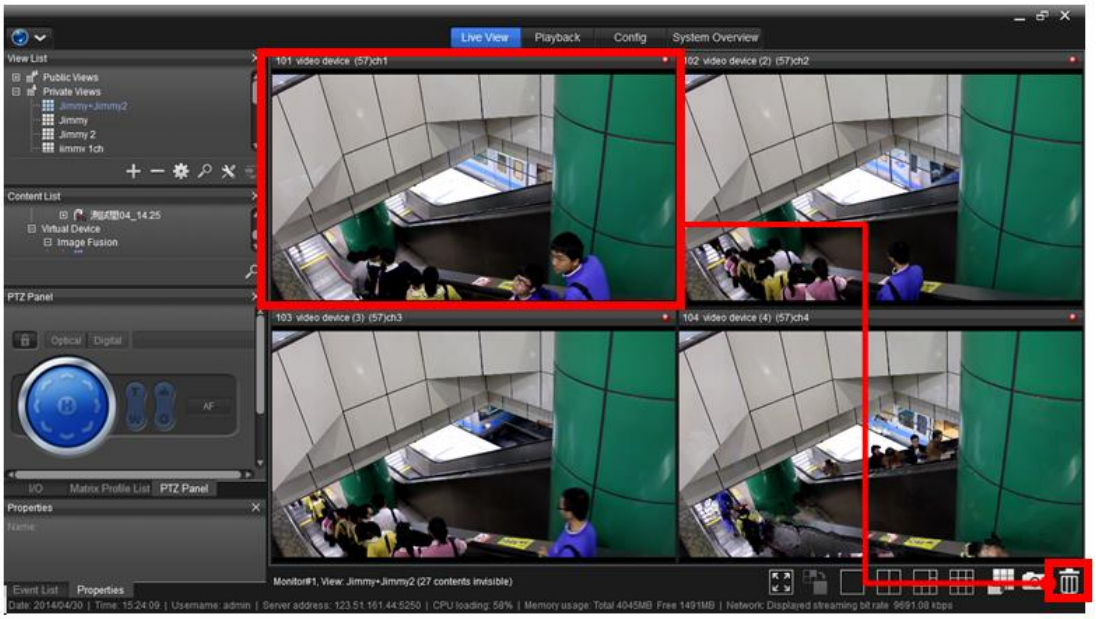
1. Access the **Live View** tab.



2. Click the **View list** you want to edit.



3. Click on the title bar of a channel and drag it to the trash can in the corner.

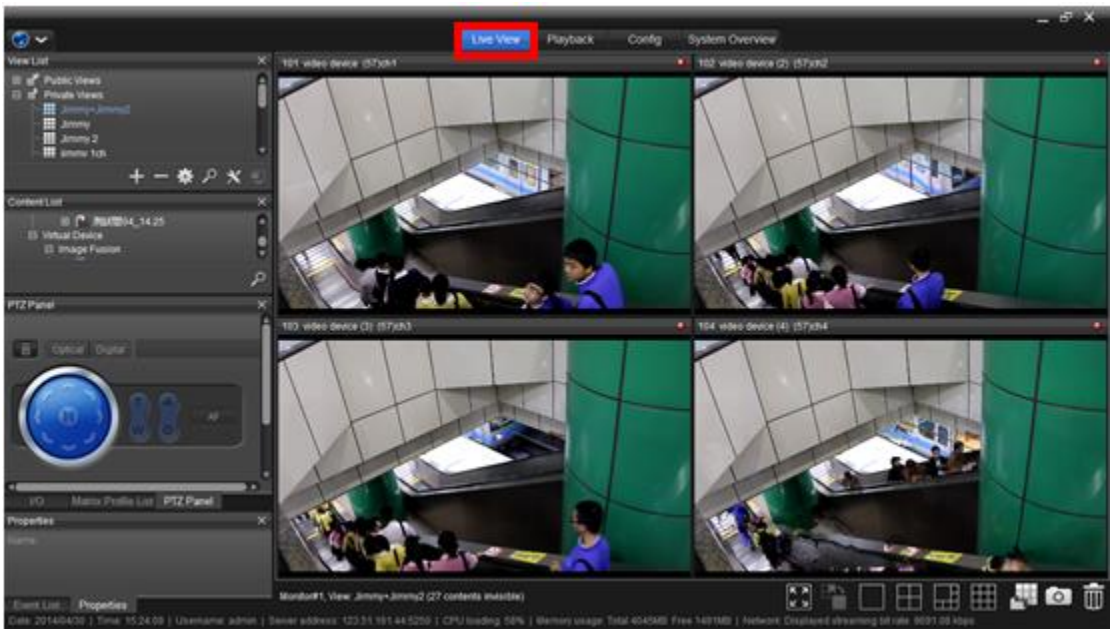


12.3.4 Add A View Group

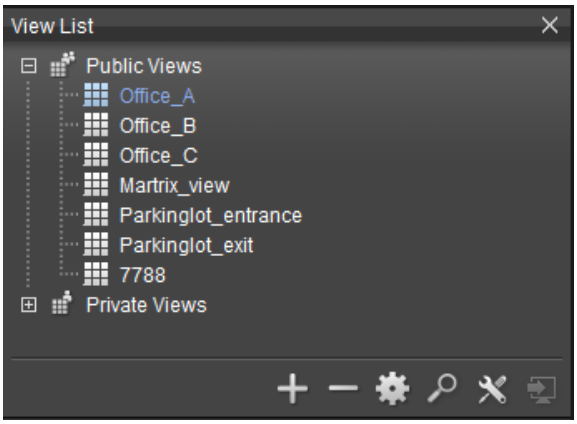
A view group is a group of views which can be organized into a tree structure. You can manage views via view group.

To launch the **View Group**:

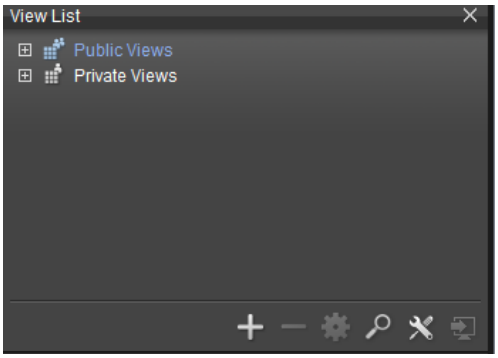
1. Access the **Live View** tab.



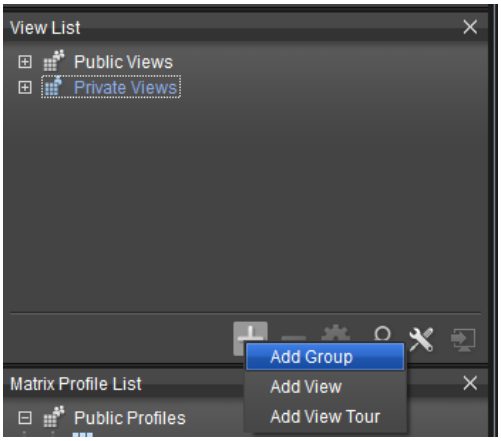
2. Click the **View list**



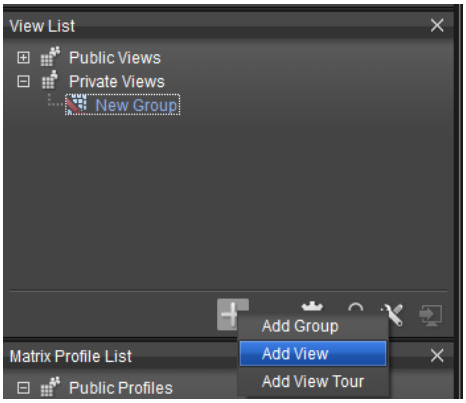
3. Select the type of view, either Public or Private, to be created.

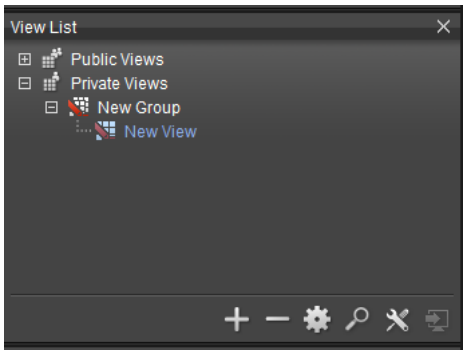


4. Click on the add sign icon + to add **View Group**.



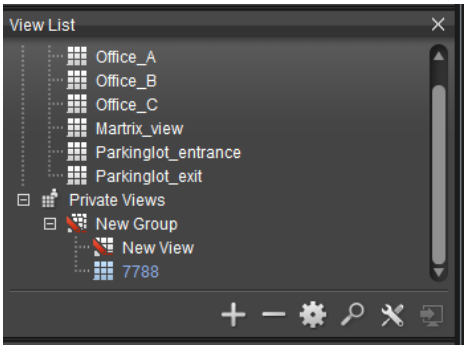
5. Click on add new view and new view will be added under selected group type.





OR

Drag the exist view to **View Group**.

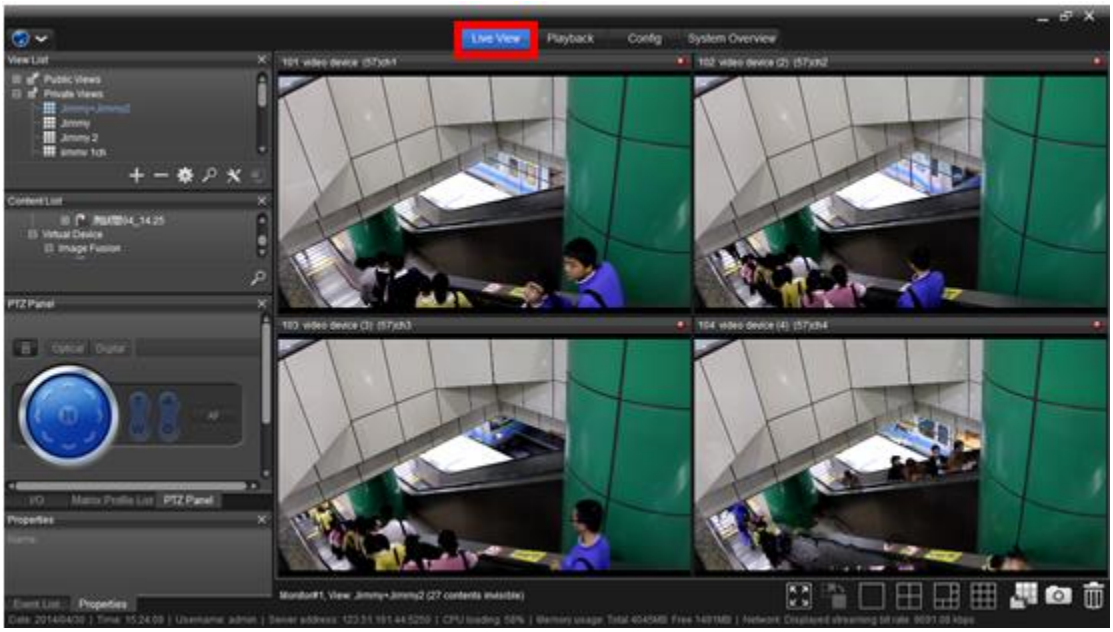


12.3.5 Add A View Tour

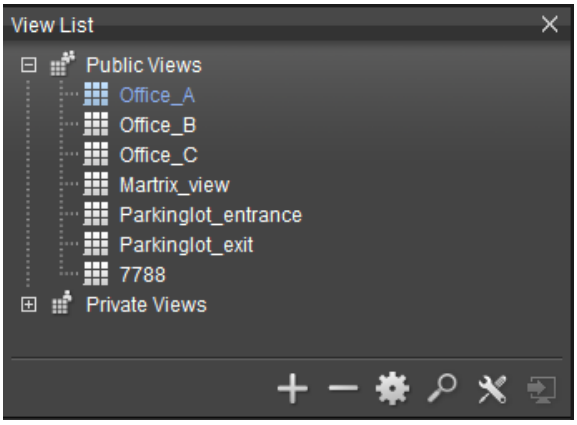
A view tour is a set of different views which are automatically rotated to show in the view area.

To launch the **View Tour**:

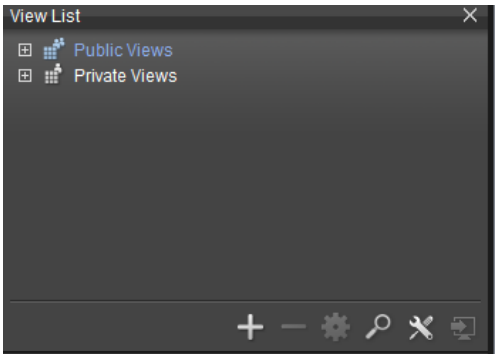
1. Access the **Live View** tab.



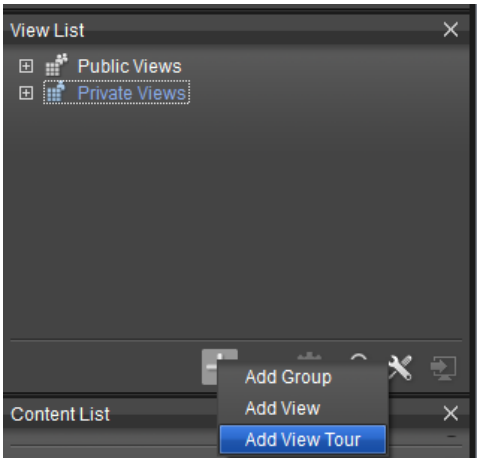
2. Click the **View list**



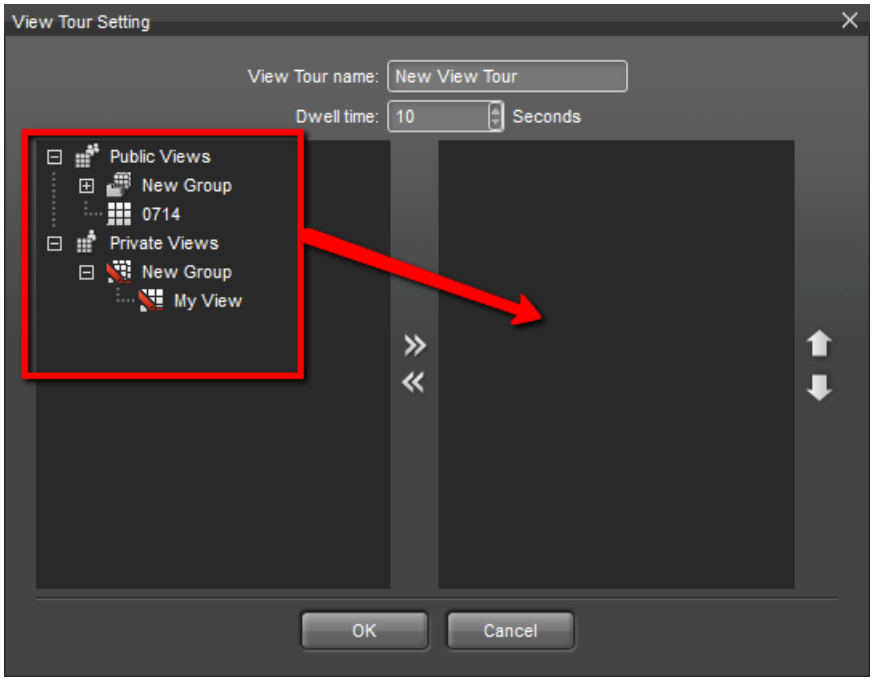
3. Select the type of view, either Public or Private, to be added.



4. Click on the add sign icon + to add **View Tour**.



5. **View Tour Setting** opens.



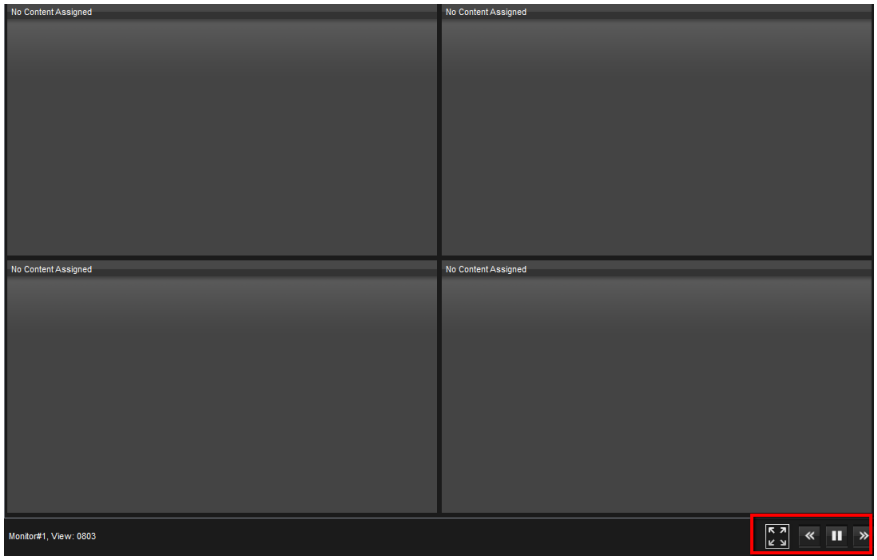
The featured settings are:

Setting	Description
View Tour Name	Edits **View Tour Name**.
Dwell Time	Edits the time interval when a view switches to the next one in a view tour. ▸ 1 to 60 seconds are available.

	Add view to **View Tour**.
	Delete view to **View Tour**.
	Moves the selected view up.
	Moves the selected view down.

6. Click the **OK** button and apply the change.

7. In View Tour will switch between previous and next views, and toggle full screen.



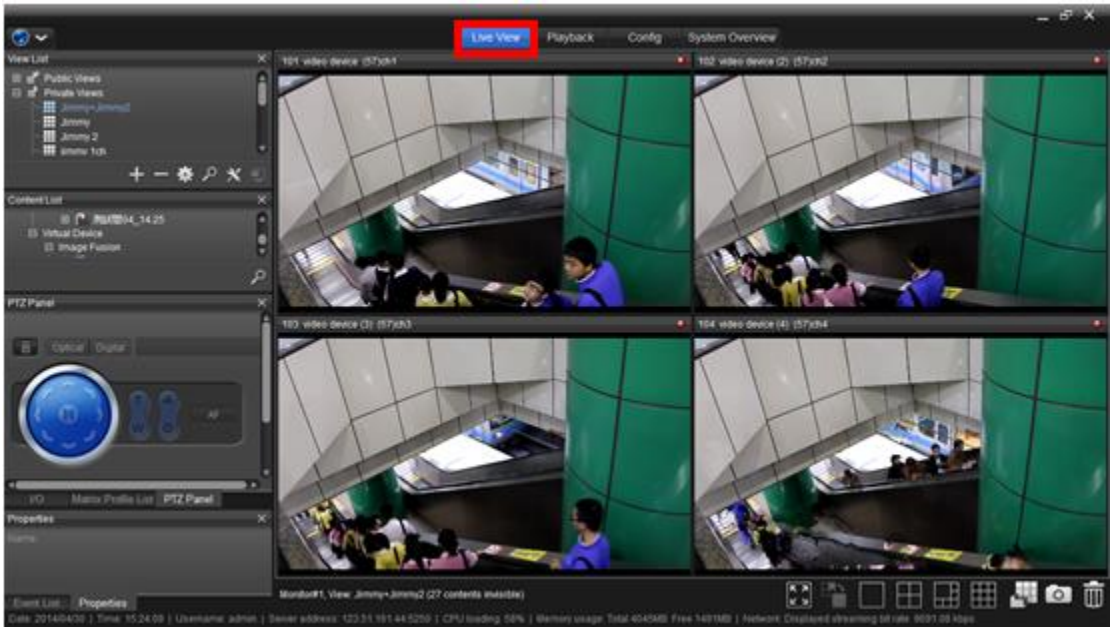
The featured settings are:

Setting	Description
	Toggle full-screen
	Go to previous view
	Pause
	Go to next view

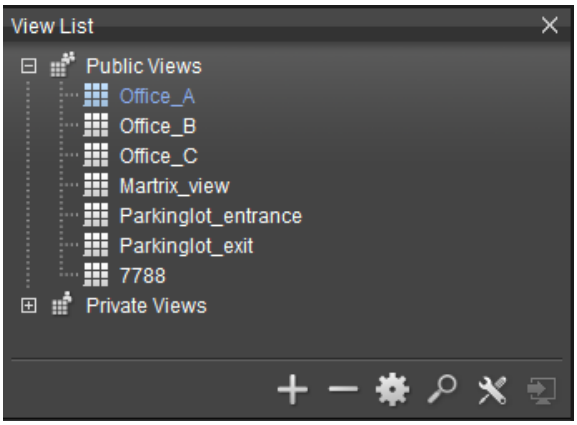
12.3.6 Duplicate A View

To duplicate a **View**:

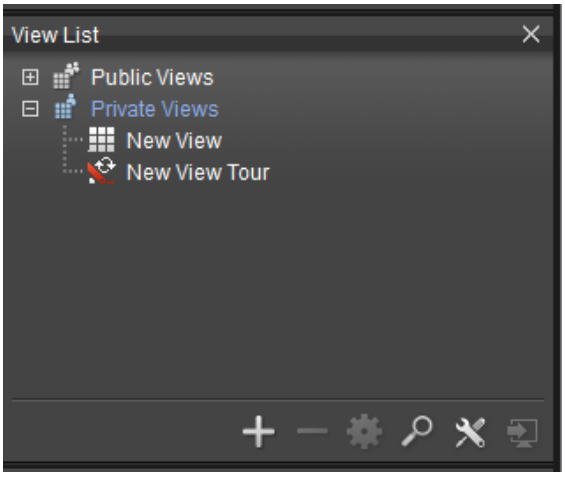
1. Access the **Live View** tab.



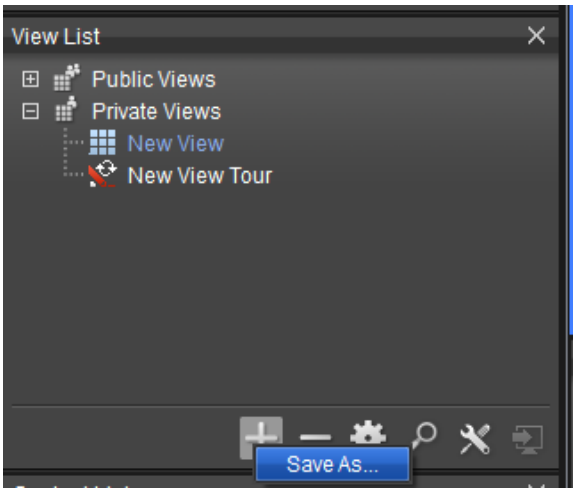
2. Click the **View list**



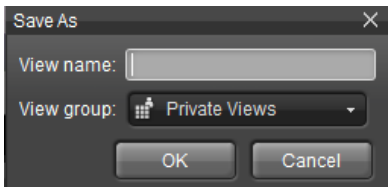
3. Select the type of view, either Public or Private, to be duplicated.

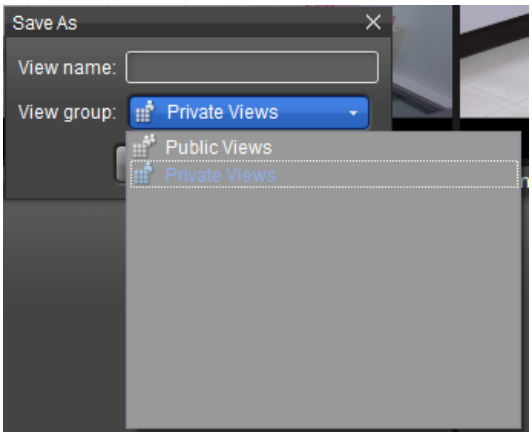


4. Click on the add sign icon + and continue to click on Save As …



5. Edits the name of the duplicated view and specify the destination view group.



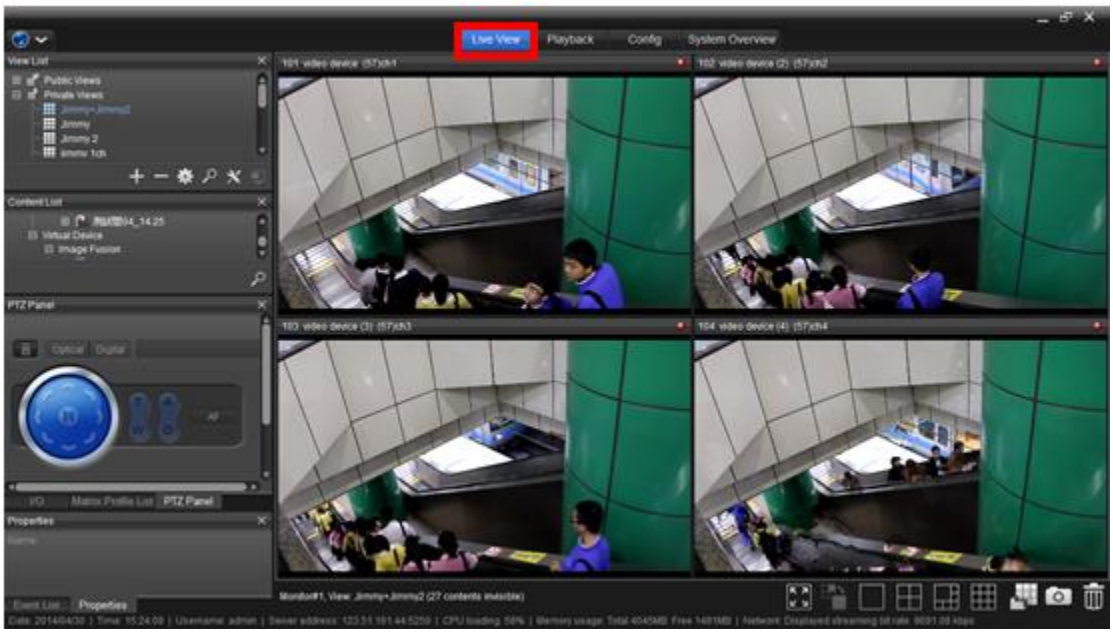


	You can duplicate for a view and a view tour.

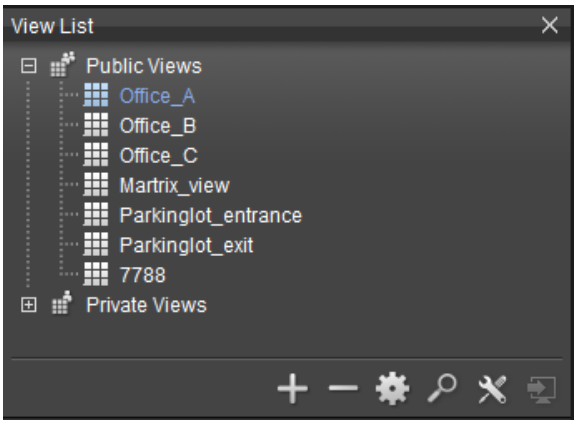
12.3.7 Search A View

To search the **View**:

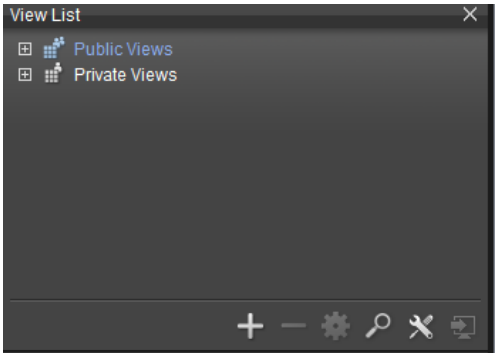
1. Access the **Live View** tab.



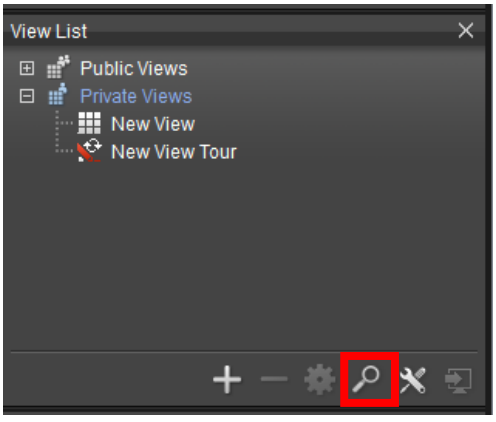
2. Click the **View list**



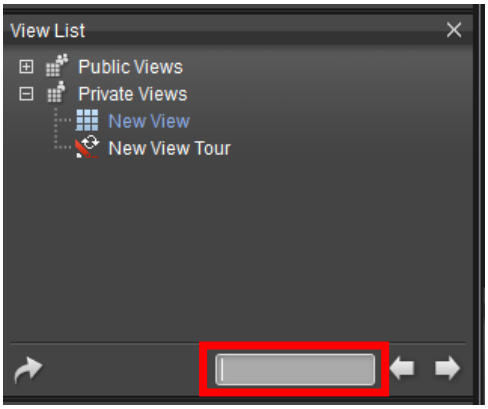
3. Select the type of view, either Public or Private, to be searched.



4. Click on the magnifier icon will show a text field.



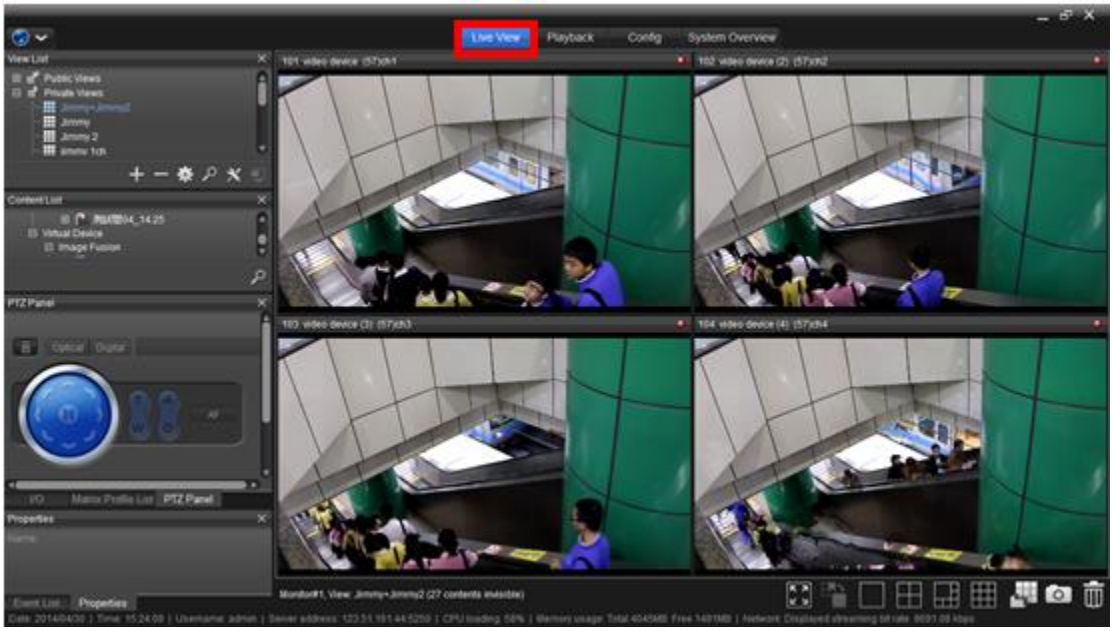
5. Type the view would like to search. Clicking on the arrows to focus on the matched results.



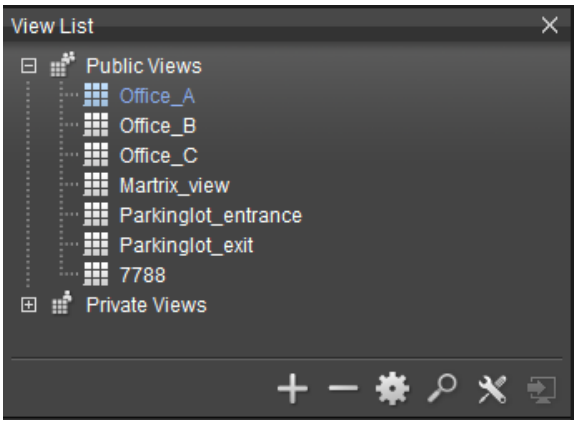
12.3.8 Delete A View

To delete the **View**:

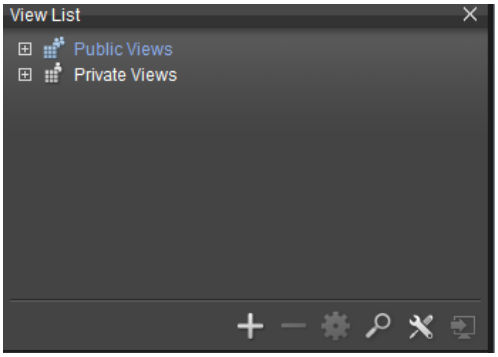
1. Access the **Live View** tab.



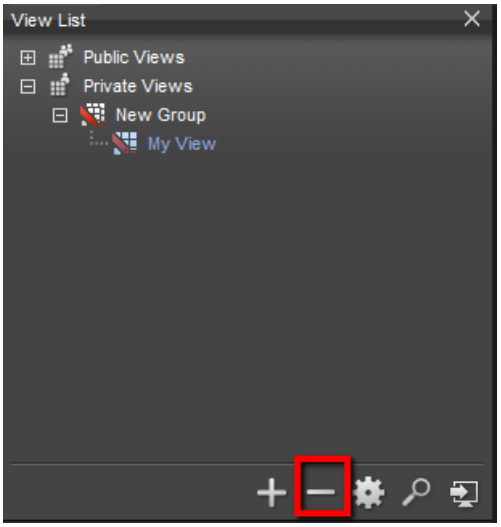
2. Click the **View list**



3. Select the type of view, either Public or Private, to be deleted.



4. Click the delete icon ━ to delete a **View**.

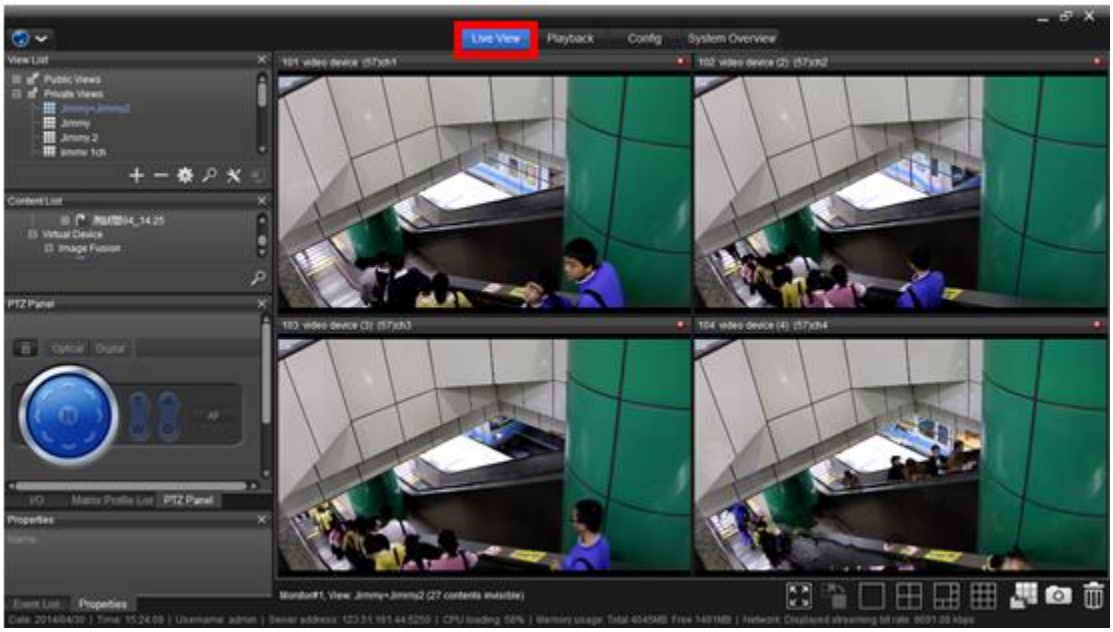


	An error message will pop up if you do not have permissions to modify a view.
	You can delete for a view, a view tour, or public/private view

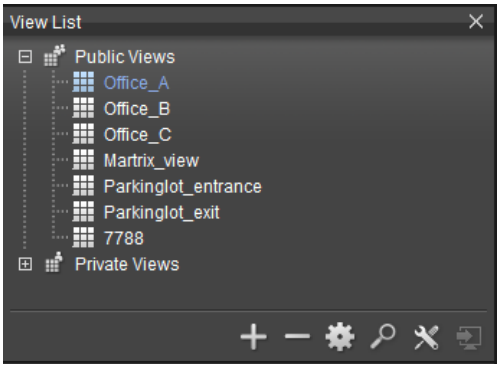
12.3.9 Assign stream profile

To assign profile for the **View**:

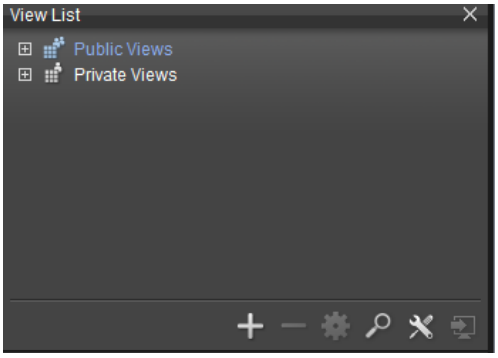
1. Access the **Live View** tab.



2. Click the **View list**

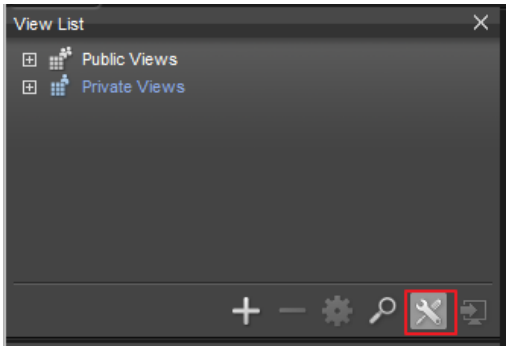


3. Select the type of view.

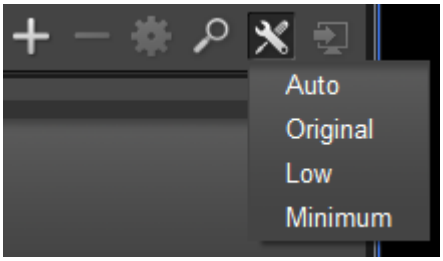


	You can assign the stream profile for a view, a view tour, or public/private view

4. Click on to choose a universal stream profile for it



5. Choose automatically adjust stream profile by the grid, or switch to specific stream profile once.



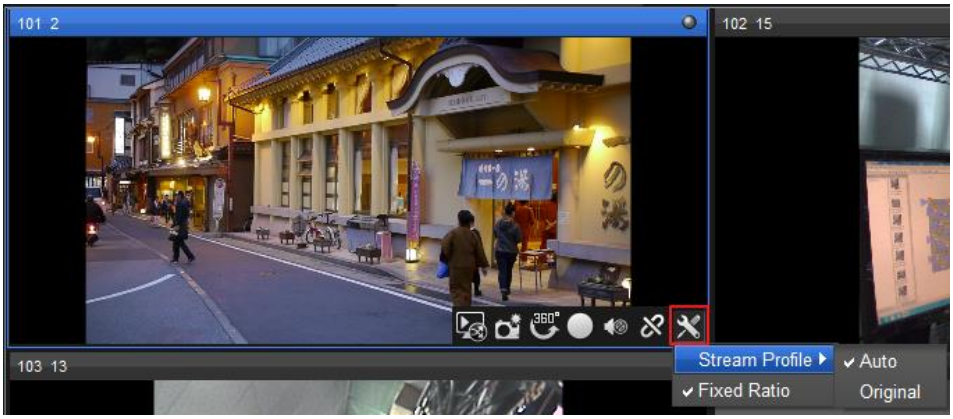
The featured settings are:

Setting	Description
Auto	Display in original profile for all cameras in the view when select 1x1 grid display. Display in low profile for all cameras in the view when select 4-15 channels of grid display. Display in minimum profile for all cameras in the view when select 16 or more channels grid display.

Original	Display in the original profile for all cameras in the view.
Low	Display in the low profile for all cameras in the view.
Minimum	Display in the minimum profile for all cameras in the view.

	If the stream profile chosen is not supported by specific cameras, the cameras will remain the original stream profile settings.

6. Also can adjust specific camera stream profile on grid.



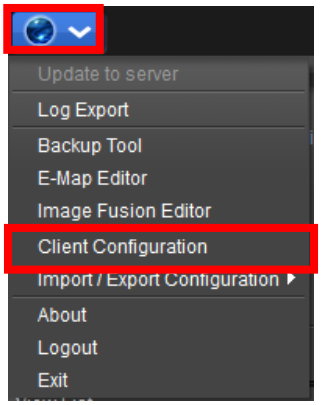
12.4 Client Configuration

To “configure the client” is to configure the **NuClient**‘s “preference” to control how the software acts each time the software is used. It also controls how the user interface is presented.

To launch the **Client Configuration**:

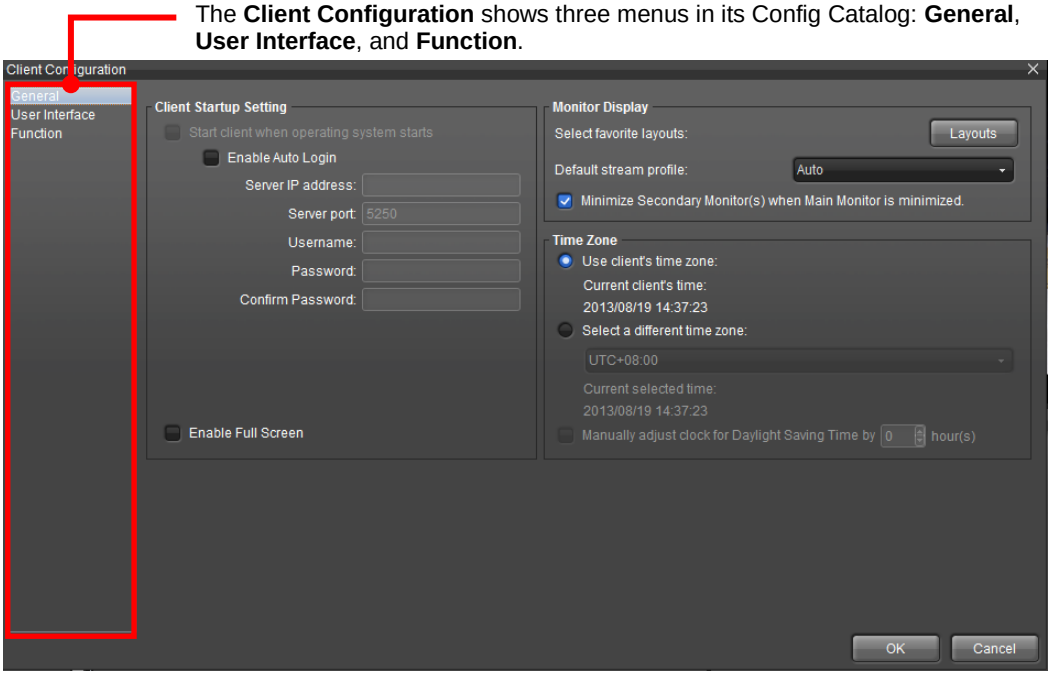
1. Access the **NuClient**.
2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .

   The menu opens.



3. Click the **Client Configuration**.

The **Client Configuration** launches and shows three menus in its Config Catalog: **General**, **User Interface**, and **Function**.



To know the **General** menu, see The General Menu.

To know the **User Interface** menu, see The User Interface Menu.

To know the **Function** menu, see The Function Menu.

12.4.1. The General Menu

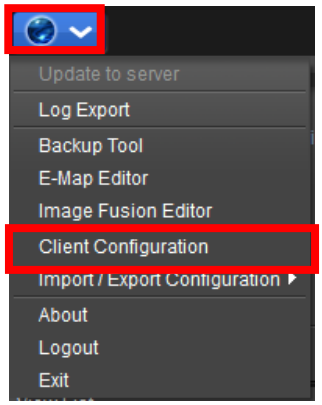
It relies on the **General** menu of to configure how the **NuClient** acts each time it is used.

To open the **General** menu:

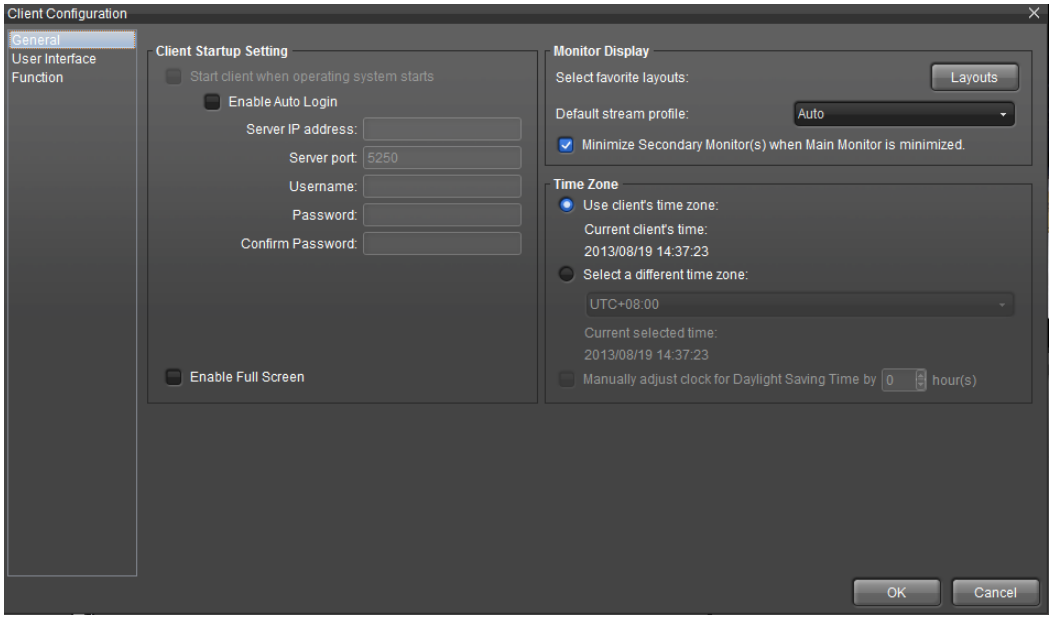
1. Access the **NuClient**.

2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.

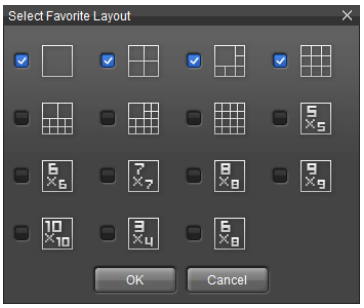


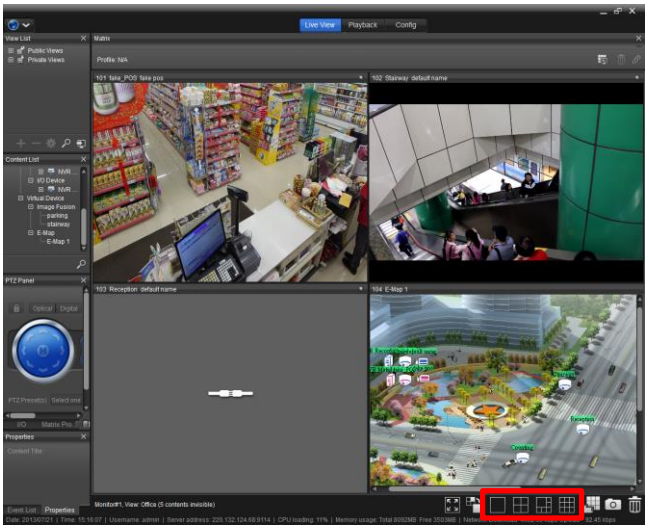
   The **Client Configuration** launches and shows the **General** menu by default.



The **General** menu features three group boxes: **Client Startup Setting**, **Monitor Display**, and **Time Zone**.

They present the following settings:

<table>
<tr><th>Group Box</th><th>Setting</th><th>Description</th></tr>
<tr><td rowspan="3">Client Startup Setting</td><td>Start client when operating system starts</td><td>Tick the check box to enable the NuClient to auto-launch when the operating system starts up.</td></tr>
<tr><td>Enable Auto Login</td><td>Tick the check box to enable the NuClient to auto-connect to the specified server when the NuClient is launched.
1. When enabled, the following settings are available:
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Server IP address</td><td>Sets the IP address of the server to connect to.</td><td>--</td></tr>
<tr><td>Server port</td><td>Sets the port number of the Management Server IP address to connect to.</td><td>5250</td></tr>
<tr><td>Username</td><td>Sets the username to login to the Management Server.</td><td>--</td></tr>
<tr><td>Password</td><td>Sets the password to login to the Management Server.</td><td>--</td></tr>
<tr><td>Confirm Password</td><td>Re-enters the password to login to the Management Server.</td><td>--</td></tr>
</table></td></tr>
<tr><td>Enable Full Screen</td><td>Tick the check box to enable the NuClient to be opened in full screen.</td></tr>
<tr><td>Monitor Display</td><td>Select favorite layouts</td><td>Opens a Select Favorite Layout window for users to select up to 4 different grid layouts as their favorites. These favorite layouts will be accessible from the toolbar of the software's Live View and Playback.
 
</td></tr>
</table>

<table>
<tr><td rowspan="2"></td><td></td><td>  </td></tr>
<tr><td>Default Stream Profile</td><td>Sets the default stream profile when dragging a camera to View.
▸ Four options are available: Auto, Original, Low and Minimum.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Auto</td><td>Display in original profile for the camera in the view when selecting 1x1 grid display.
Display in low profile for the camera in the view when selecting 4-15 channels of grid display.
Display in minimum profile for the camera in the view when selecting 16 or more channels grid display.</td></tr>
<tr><td>Original</td><td>Display in the original profile for all cameras in the view.</td></tr>
<tr><td>Low</td><td>Display in the low profile for all cameras in the view.</td></tr>
<tr><td>Minimum</td><td>Display in the minimum profile for all cameras in the view.</td></tr>
</table>
Tick the check box to minimize the secondary monitor(s) when the main monitor is minimized.
1. The NuClient can connect up to 4 monitors.
2. Live View can only be opened in any of the 4 monitors, and Playback can only run on the first monitor only.</td></tr>
<tr><td rowspan="3">Time Zone</td><td>Use client’s time zone</td><td>Applies the NuClient PC’s time zone for system time zone.</td></tr>
<tr><td>Select a different time zone</td><td>Manually sets some other time zone.</td></tr>
<tr><td>Manually adjust clock for Daylight Saving Time by _____ hour(s)</td><td>Enables/disables daylight saving time and defines how many hours should the system time be adjusted forward/backward for.</td></tr>
</table>

	If the stream profile chosen is not supported by specific cameras, the cameras will choose “Original” profile when added to View.

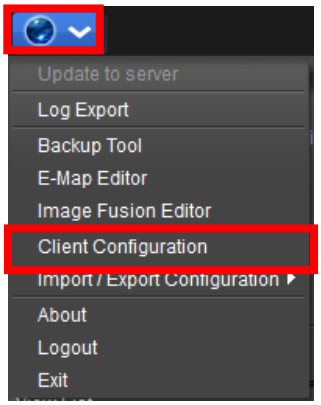
12.4.2 The User Interface Menu

It relies on the **User Interface** menu to control which information to show on the software's status bar / content title and which dockable components to show in the software's user interface.

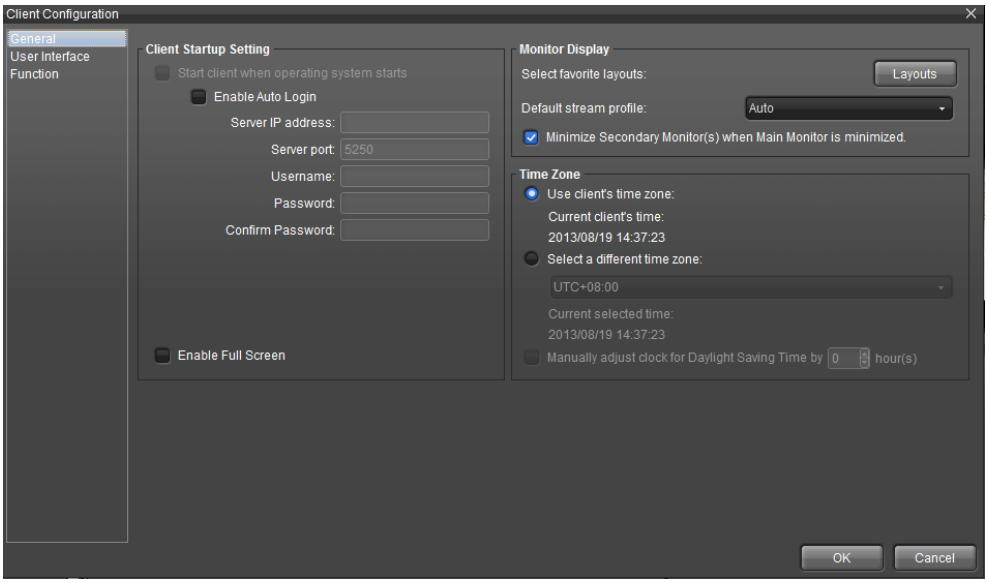
To open the **User Interface** menu:

1. Access the **NuClient**.
2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.

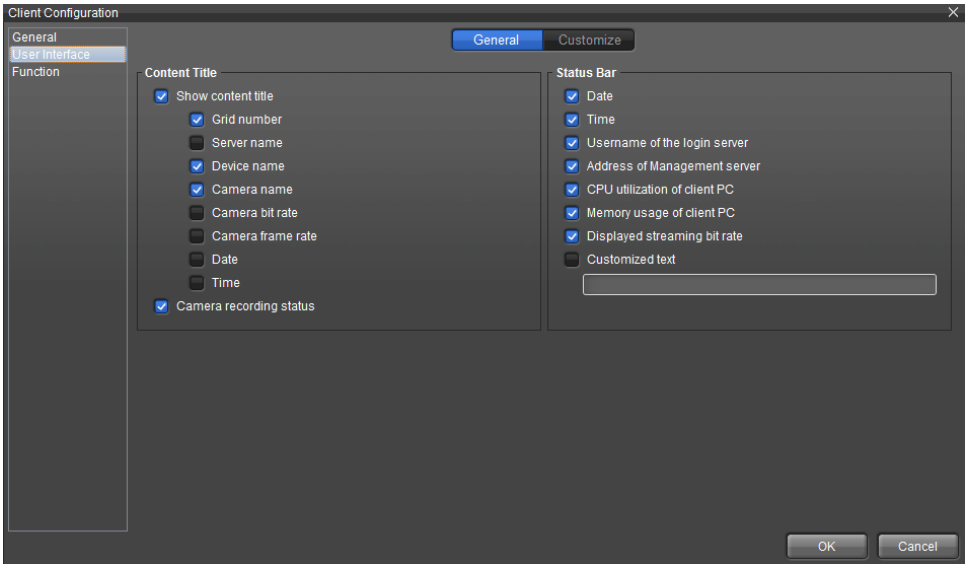


3. The **Client Configuration** launches and shows the **General** menu by default.



4. From the Config Catalog, click the **User Interface**.

   The **User Interface** menu opens and shows the **General** tabbed page.



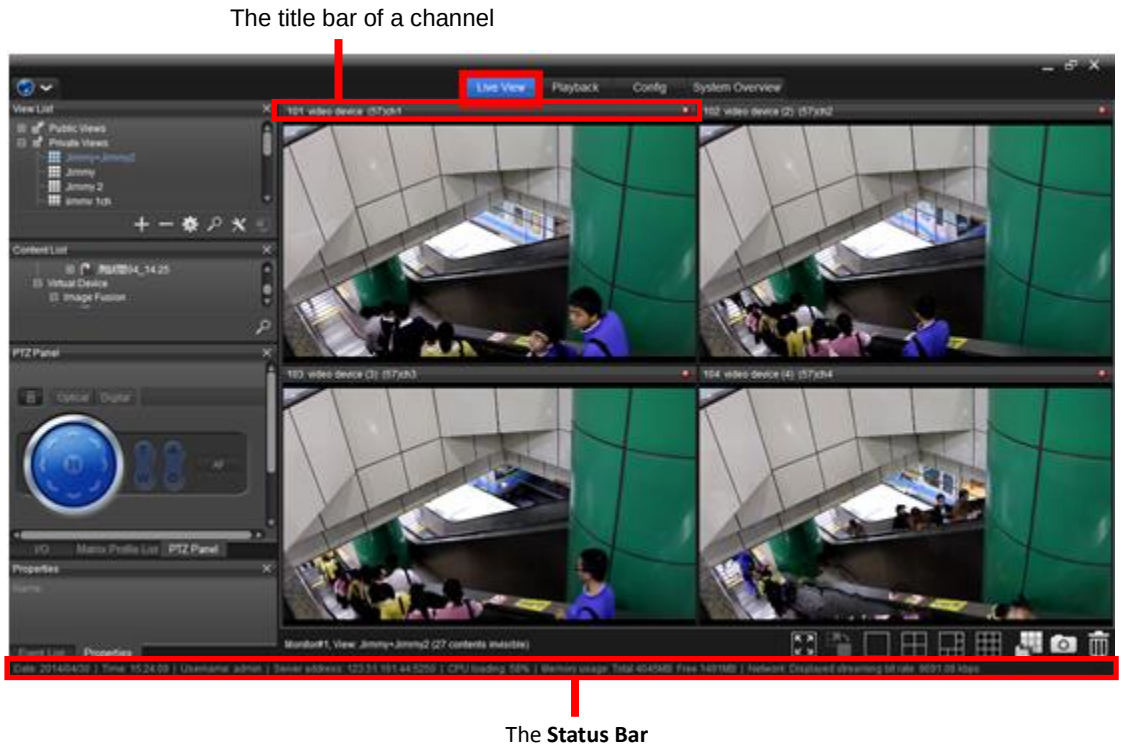
   To know the **General tabbed** page, see The General tabbed page.

   To know the **Customize** tabbed page, see The Customize tabbed page.

12.4.2.1 The General tabbed page

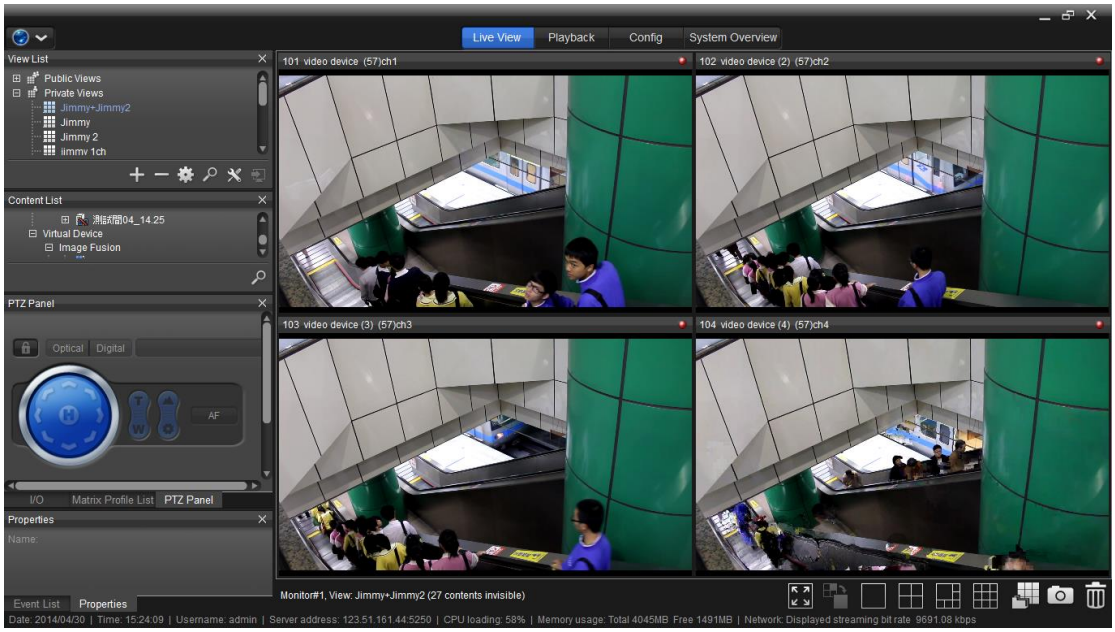
It relies on the **General** tabbed page to enable/disable a piece of information on the **Status Bar** of **NuClient**, which locates at the bottom of the software.

It also relies on the **General** tabbed page to enable/disable a piece of information on the title bar of a video channel in the **View Area**



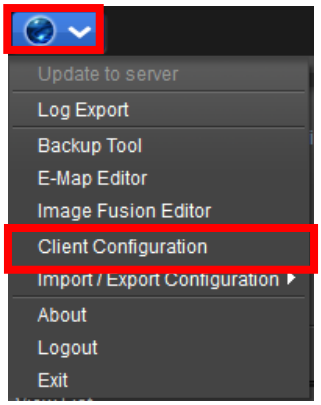
Follow the guide below to enable/disable a piece of information on the software's **Status Bar** or a piece of information on the title bar of a video channel in the **View Area**.

1. Access the **NuClient**.

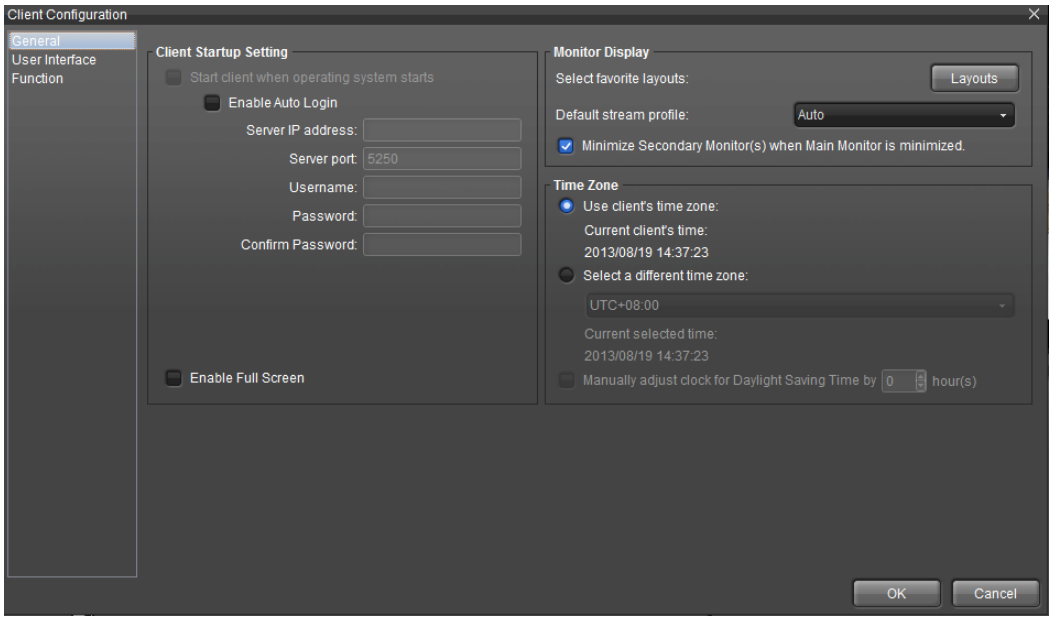


2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .

   The menu opens.

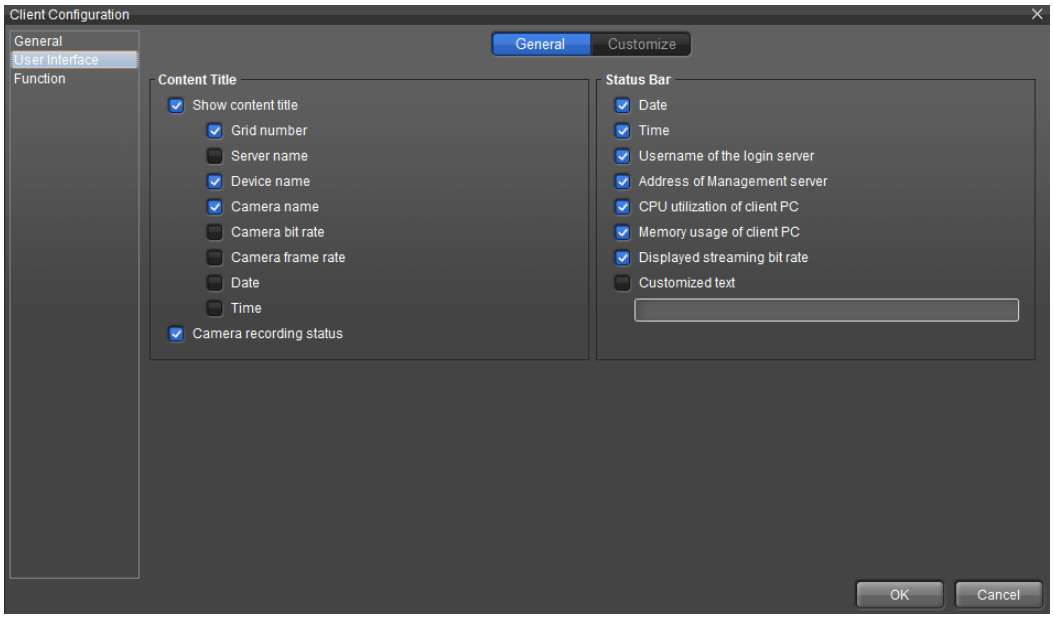


3. The **Client Configuration** launches and shows the **General** menu by default.



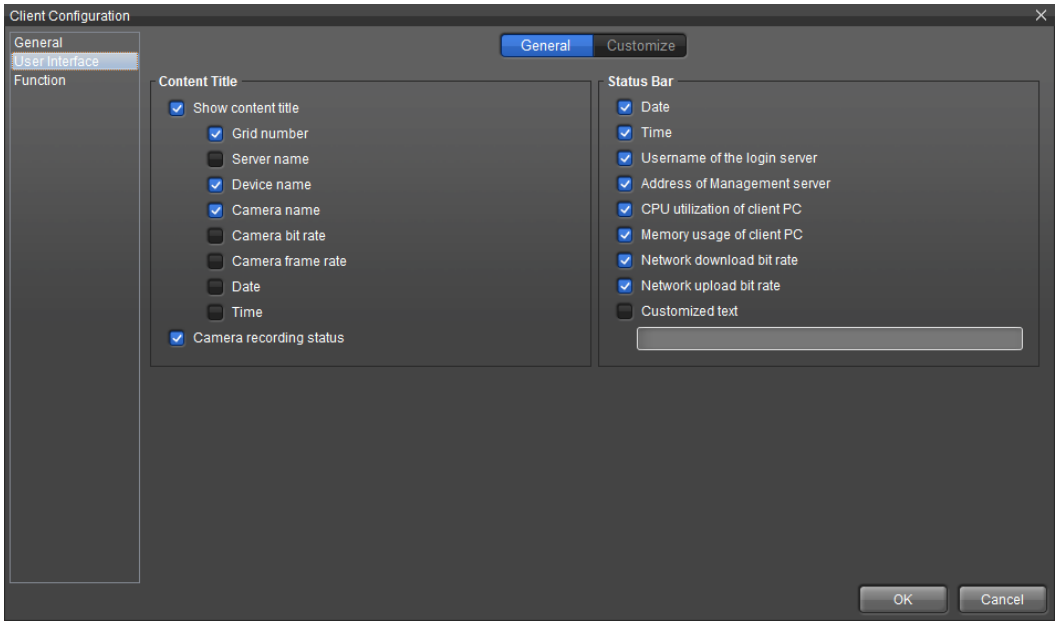
4. From the Config Catalog, click the **User Interface**.

   The **User Interface** menu opens and shows the **General** tabbed page.



5. In the **Content Title** group box, select/deselect an item to enable/disable that piece of information on the title bar of a video channel in the **View Area**.

6. In the **Status Bar** group box, select/deselect an item to enable/disable that piece of information on the software's **Status Bar**.
   (The **Customized text** setting enables a piece of custom information to show in the **Status Bar**. Maximum 64 Unicode characters are allowed.)



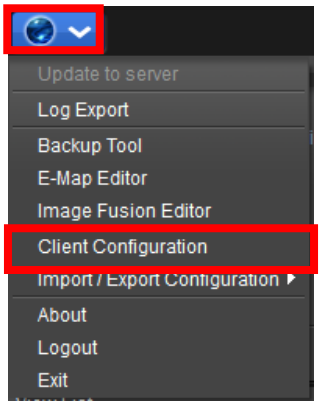
12.4.2.2 The Customize tabbed page

It relies on the **Customize** tabbed page to configure which dockable widget to show at the Config Catalog of each **Live View** and **Playback** of the software.

Follow the guide below to enable/disable a widget at the Config Catalog of each **Live View** and **Playback**:

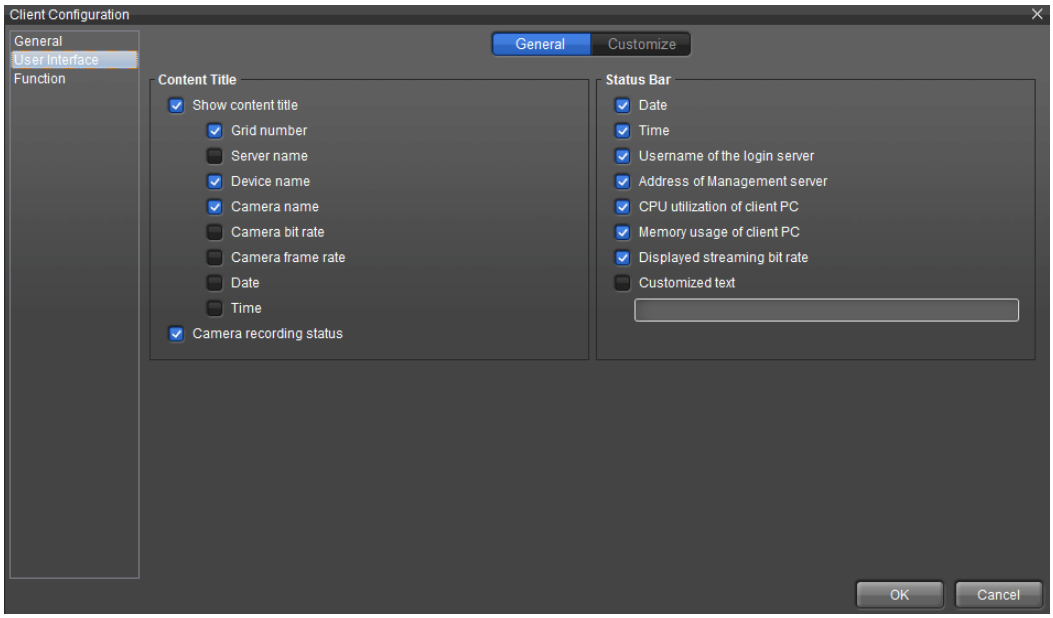
1. Access the **NuClient**.
2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.



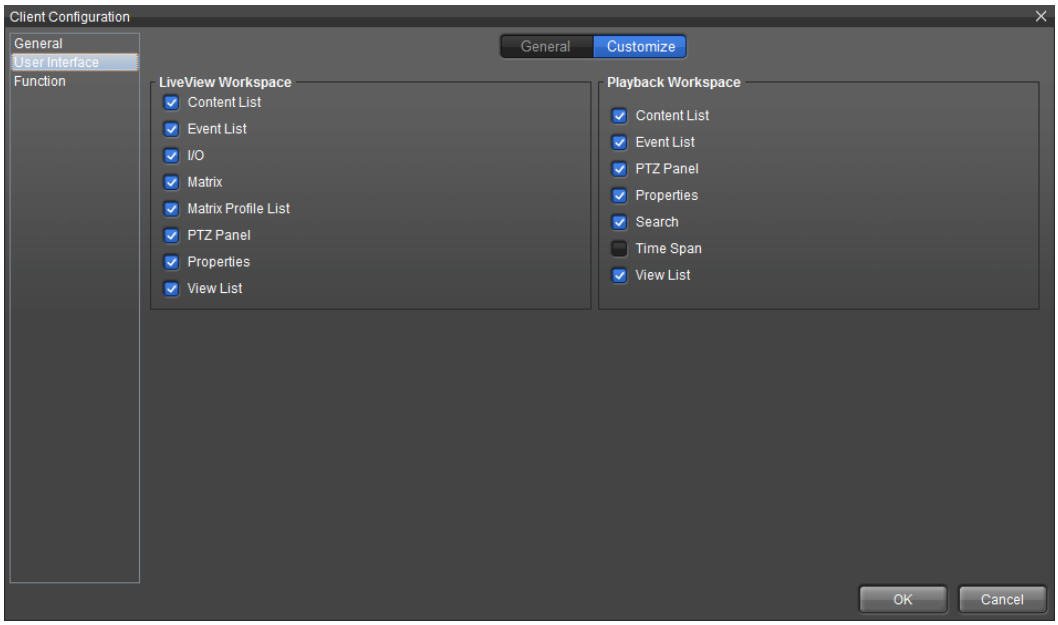
3. The **Client Configuration** launches and shows the **General** menu by default.
4. From the Config Catalog, click the **User Interface**.

   The **User Interface** menu opens and shows the **General** tabbed page.



5. Click the **Customize** tab.

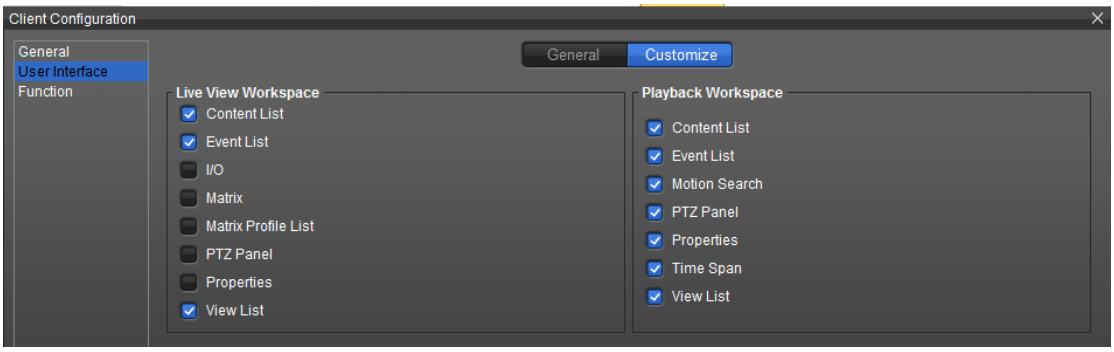
   The **Customize** tabbed page opens.



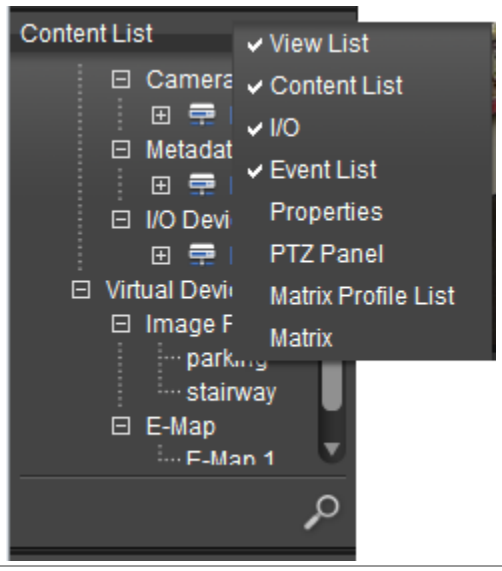
6. In the **Live View Workspace** group box, select/deselect an item to enable/disable that widget at the Config Catalog of the **Live View** screen.

7. In the **Playback Workspace** group box, select/deselect an item to enable/disable that widget at the Config Catalog of the **Playback** screen.

8. For example, select only **Content List, Event List, and View List** in the Live View Workspace group box.



The **Live View** screen then shows only the widgets of the Content List, Event List, and View List.

	Right-click on the title bar of a dockable widget to open a context menu to enable/disable a widget at the Config Catalog of the **Live View** or **Playback** screen. 

	Double-click or pull out the title bar of a dockable widget to float the widget.

12.4.3 The Function Menu

It relies on the **Function** menu to configure the features of each the **Live View** and

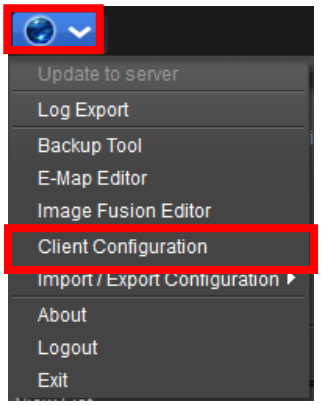
Playback screen.

To open the **Function** menu:

1. Access the **NuClient**.

2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .

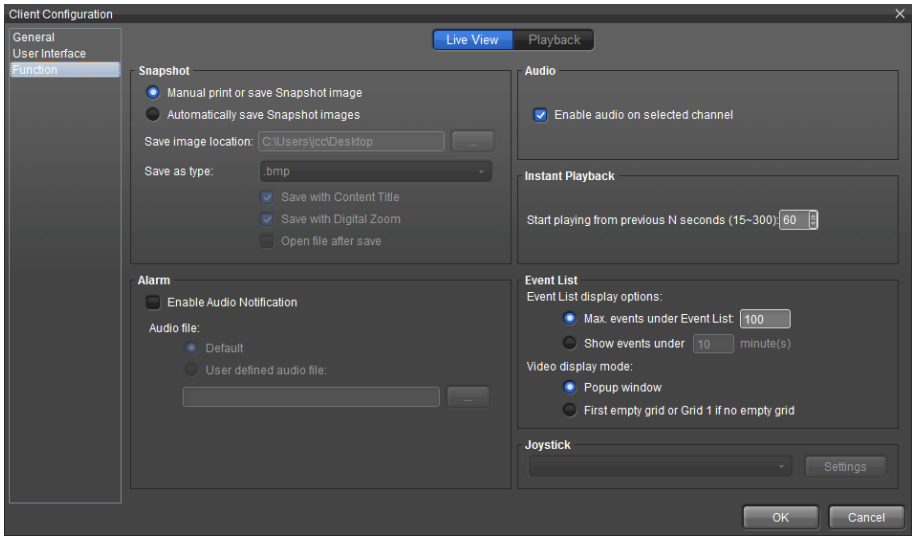
   The menu opens.



3. The **Client Configuration** launches and shows the **General** menu by default.

4. From the Config Catalog, click the **Function**.

   The **Function** menu opens and shows the **Live View** tabbed page by default.



   To know the **Live View** tabbed page, see Live View tabbed page.
   To know the **Playback** tabbed page, see Playback tabbed page.

12.4.3.1 Live View tabbed page

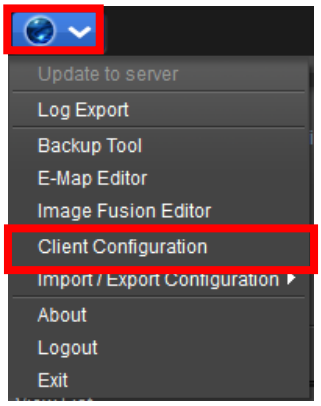
It relies on the **Live View** tabbed page to enable/disable a feature of the **Live View** screen.

To open the **Live View** tabbed page:

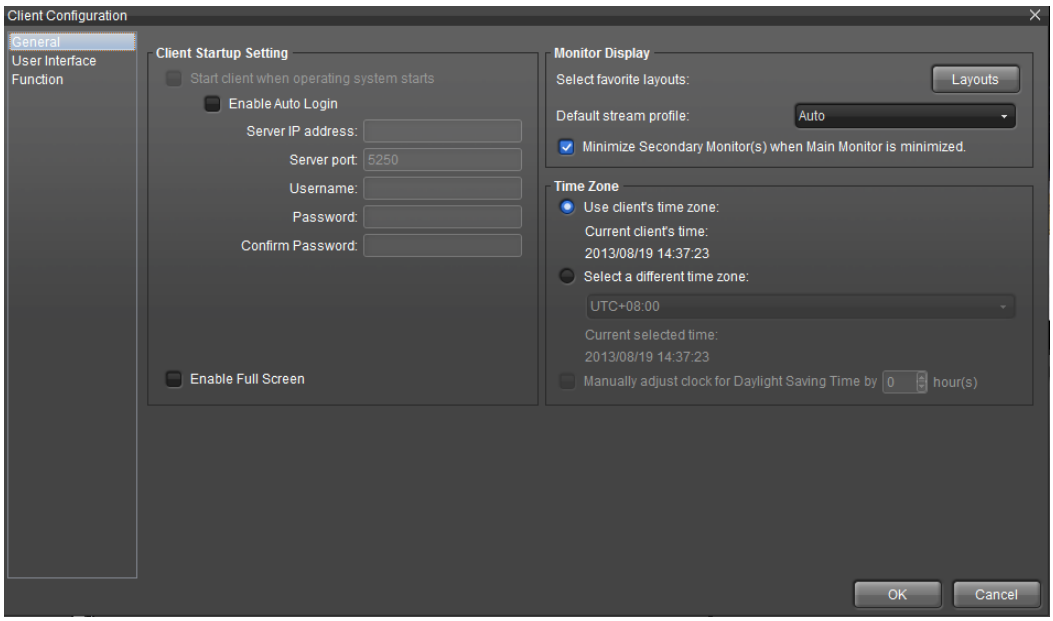
1. Access the **NuClient**.

2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.



3. The **Client Configuration** launches and shows the **General** menu by default.



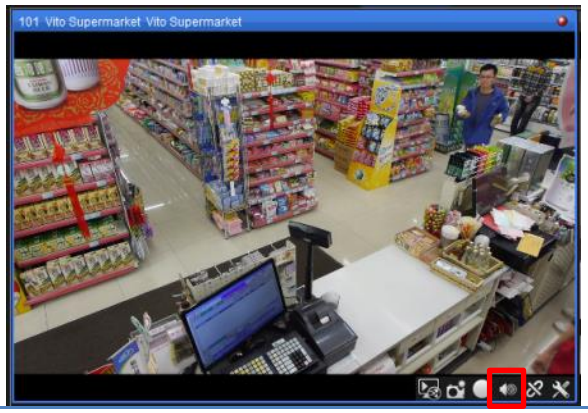
4. From the Config Catalog, click the **Function**.

The **Function** menu opens and shows the **Live View** tabbed page by default.

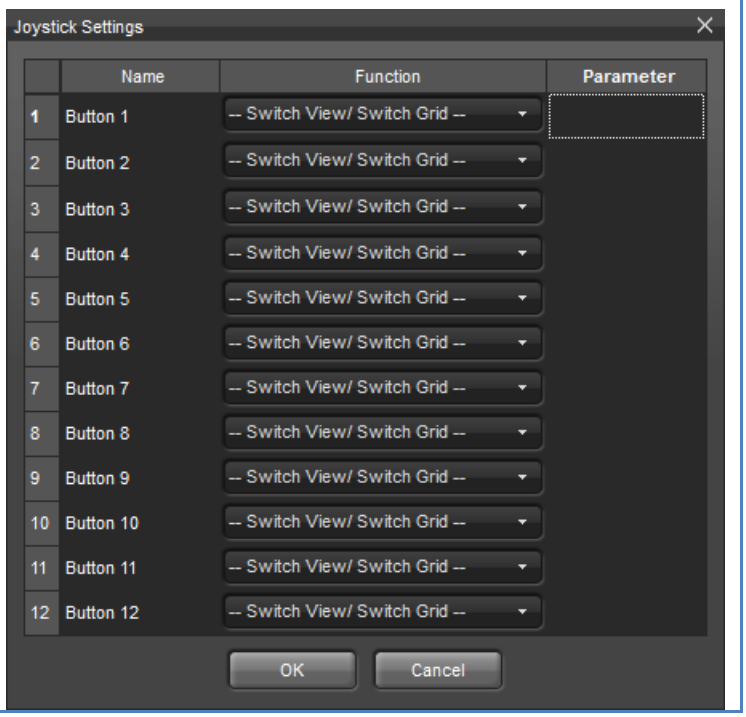
The featured settings are:

<table>
<tr><th>Group Box</th><th>Setting</th><th>Description</th></tr>
<tr><td rowspan="2">Snapshot</td><td>Manual print or save Snapshot image</td><td>Tick the check box to assign the folder to save a snapshot to each time a snapshot is captured.</td></tr>
<tr><td>Automatically save Snapshot image</td><td>Tick the check box to save the snapshot to a specific folder by a specific format.

When enabled, the following settings are available:
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Save image location</td><td>Sets where to save the captured snapshot.
▸ Click the ellipsis (…) button to open an explorer window to browser where to save the snapshot.</td><td>The desktop folder</td></tr>
<tr><td>Save as type:</td><td>Sets the file format to save the snapshot to.
▸ Two types are available: .bmp and .jpg</td><td>.bmp</td></tr>
<tr><td>Save with Content Title</td><td>Saves the captured snapshot with the “content title” of the video channel (, which is delivered by the title bar of the video channel.)</td><td>Selected (enabled)</td></tr>
<tr><td>Save with Digital Zoom</td><td>Saves the captured snapshot with the “Digital Zoom” of the video channel</td><td>Selected (enabled)</td></tr>
<tr><td>Open the file after save</td><td>Auto-opens the snapshot after it is saved.</td><td>Deselected (disabled)</td></tr>
</table></td></tr>
<tr><td>Alarm</td><td>Enable Audio Notification</td><td>Enables/disables the NuClient to sound an audio for notification when an event comes up.
1. Enabled is the default.
2. When enabled, the following group of settings becomes available:
<table>
<tr><th>Group</th><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td rowspan="2">Audio file</td><td>Default</td><td>Uses the system-featured sound file for the alarm audio.</td><td>Selected (Enabled)</td></tr>
<tr><td>User-defined audio file:</td><td>Uses a unique sound file of user’s own for the alarm audio.
1. Click the ellipsis (…) button to open an explorer window to</td><td>--</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td></td><td>browser for the audio file.</td><td></td></tr>
</table>
</td></tr>
<tr><td>Audio</td><td>Enable audio on selected channel</td><td>Sets whether to hear the sound of the instant video when the camera channel is clicked.
1. This setting requires the camera to have a microphone.
2. Enables the mouse over any video channel in the View Area to launch a tool bar to enable/disable the camera audio.
  </td></tr>
<tr><td>Instant Playback</td><td>Start playing from previous N seconds (15~300):</td><td>Defines how fast to forward or rewind an instant video footage
1. 15 to 300 seconds configurable.
2. 60 seconds is the default.</td></tr>
<tr><td>Event List</td><td>Event List display options</td><td>Configures how to display an event in the Event List, by defining how many events to show or how long to display an event for. The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Max. events under Event List:</td><td>Defines how many events to show in the Event List.
1. 1 to 1000 events configurable.
2. 100 events is the default.</td><td>Selected (Enabled)</td></tr>
<tr><td>Show events under __ minutes</td><td>Defines the maximum time to show an event in the Event List.
1. 10 to 60 minutes configurable.
2. 10 minutes is the default.</td><td>Deselected (Disabled)</td></tr>
</table></td></tr>
<tr><td></td><td>Video display mode</td><td>Sets video display mode.
▸ Two modes are available: Popup window or First empty grid or Grid 1 if no empty grid.</td></tr>
<tr><td>Joystick</td><td>N/A</td><td>Sets joystick feature.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Name</td><td>Joystick button name.</td></tr>
<tr><td>Function</td><td>Sets joystick function.
▸ Three functions are available: View and grid switching, Screen layout switching and PTZ control.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>View and grid switching</td><td>Go to monitor #
Next view
Previous view
Next grid
Previous grid
Go to grid #</td></tr>
</table></td></tr>
</table></td></tr>
</table>

			Screen layout switching	Toggle single camera view Toggle full-screen
			PTZ control	Digital / Optical switch Zoom in Zoom out Go to preset #
		Parameter	Joystick's parameter.	



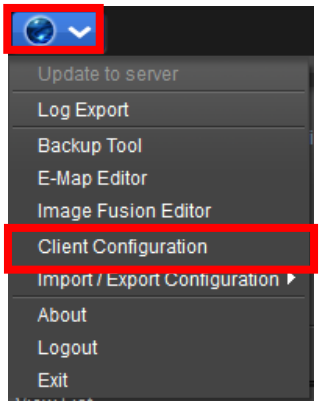
	Enable joystick option when use joystick plugged to computer.

12.4.3.2 Playback tabbed page

It relies on the **Playback** tabbed page to enable/disable a feature to/from the **Playback** screen.

To open the **Playback** tabbed page:

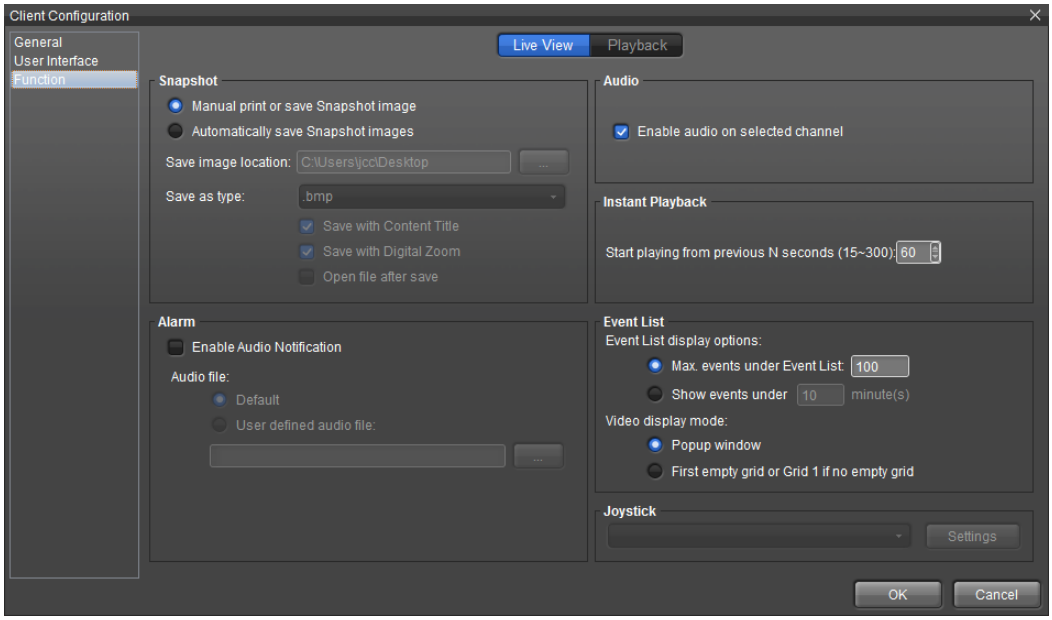
1. Access the **NuClient**.
2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .
   The menu opens.



3. The **Client Configuration** launches and shows the **General** menu by default.

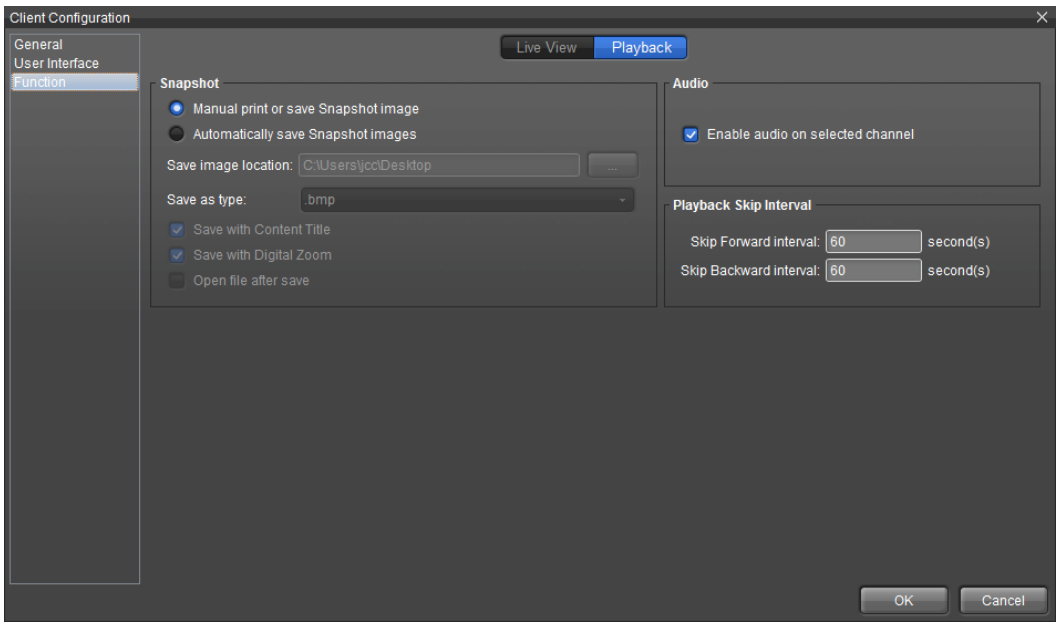
4. From the Config Catalog, click the **Function**.

   The **Function** menu opens and shows the **Live View** tabbed page by default.



5. Click the **Playback** tab.

   The **Playback** tabbed page opens.



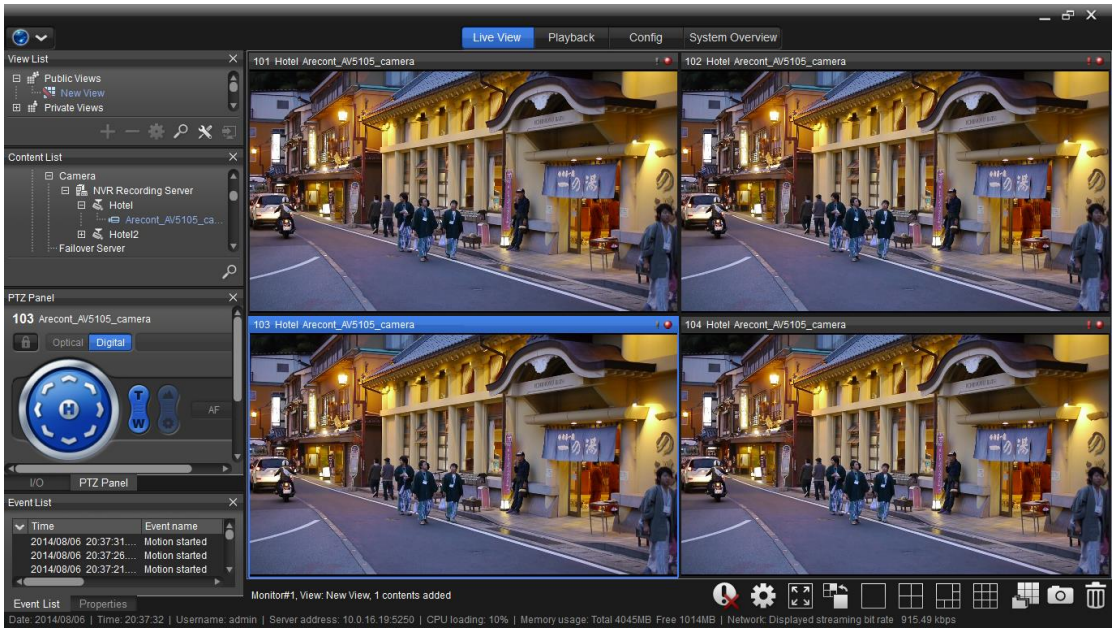
The featured settings are:

<table>
<tr><th>Group Box</th><th>Setting</th><th>Description</th></tr>
<tr><td rowspan="2">Snapshot</td><td>Manual print or save Snapshot image</td><td>Tick the check box to assign the folder to save a snapshot to each time a snapshot is captured.</td></tr>
<tr><td>Automatically save Snapshot image</td><td>Tick the check box to save the snapshot to a specific folder by a specific format.
1. When enabled, the following settings are available:
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Save image location</td><td>Sets where to save the captured snapshot.
1. Click the ellipsis (…) button to open an explorer window to browser where to save the snapshot.</td><td>The desktop folder</td></tr>
<tr><td>Save as type</td><td>Sets the file format to save the snapshot to.</td><td>.bmp</td></tr>
<tr><td>Save with Content Title</td><td>Saves the captured snapshot with the “content title” of the video channel (, which is delivered by the title bar of the video channel.)</td><td>Selected (enabled)</td></tr>
<tr><td>Save with Digital Zoom</td><td>Saves the captured snapshot with the “Digital Zoom” of the video channel</td><td>Selected (enabled)</td></tr>
<tr><td>Open the file after save</td><td>Auto-opens the snapshot after it is saved.</td><td>Deselected (disabled)</td></tr>
</table></td></tr>
<tr><td>Audio</td><td>Enable audio on selected channel</td><td>Sets whether to hear the sound of the recorded video when the camera channel is clicked.
1. This setting requires the camera to have a microphone and the audio input must be enabled during recording.</td></tr>
<tr><td>Playback Skip</td><td>Skip Forward</td><td>Defines how fast to forward a recorded video</td></tr>
</table>

Interval	**Interval**	1. 1 to 3600 seconds configurable. 2. 60 seconds is the default.
	Skip Backward Interval	Defines how fast to rewind a recorded video 1. 1 to 3600 seconds configurable. 2. 60 seconds is the default.

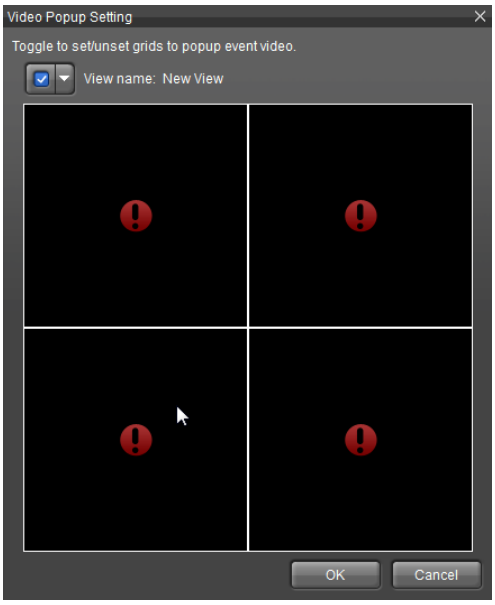
13. Live View

Live view page displays video streams or metadata streams in a grid. Grid types can be configured using the toolbar below the live view area.



The featured settings of **tool bar** are:

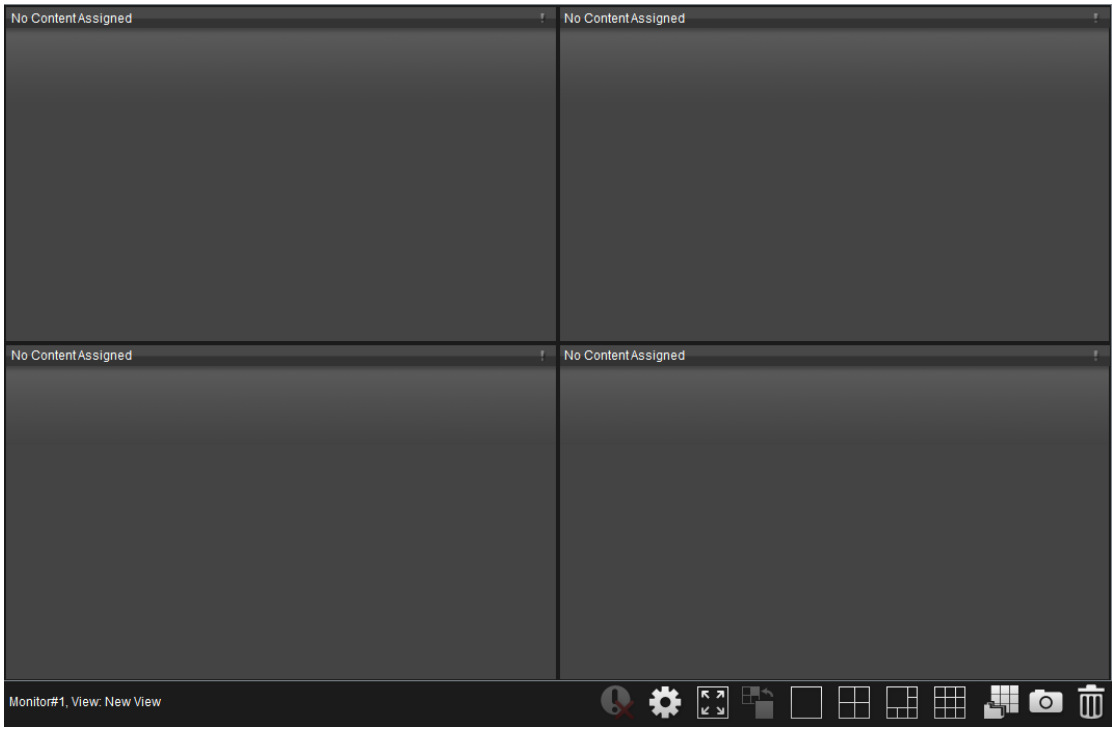
Graphic Button	Description
	Close all Video Popup at once on this monitor. Must setup Video Popup Action beforehand on Config tab.
	Click to show Video Popup Setting. Toggle on the grid to assign the grid for video popup. Toggle again to un-choose the Video Popup grid. Must setup Video Popup Action beforehand on Config tab.

	 The assigned grid will show the notification on this setting page and show a red exclamation mark on tool bar of grid.
	Toggle to extend the **video grid sector** to full screen. Click Esc on the keyboard to back to original status.
	Click to extend the chosen grid to **single grid sector**. Click again to back to original grid layout.
	The assigned favorite layout for quick switch layout. This is configurable in Client Configuration.
	Click to choose all supported layout type, including customize layout.
	Snapshot the whole grid sector.
	Remove the selected content by drag and drop content to the trash can or choose the content and then throw it to the trash can.

	Full-screen display is supported by NuClient application, but not by the web NuClient.

If you have multiple monitors, the Live View interface on secondary monitors is very similar. The main difference is in the toolbar.

The interface of Live View on a secondary monitor



The featured settings are:

Graphic Button	Description
	Switch between views
	Close Live View on a secondary monitor

13.1 Content List

Content List shows all the devices a user have permission to access. A device can be a camera, an I/O device, an image fusion, or an E-map.

Each device node as shown in the screenshot below can be expanded to see the details of each device. Expanding each device will show subordinate items, such as sensors on cameras.

13.1.1 Watch Live Video

In view area, add devices from Content List to the view area. You may add not only cameras, but also image fusion, E-Map, and I/O devices to the view area. Refer to the View section to add view, camera, view tour, etc.

13.1.2 Toolbar Content

For each camera channel has toolbar for quick operation. You can use the toolbar easily.

The featured settings are:

Setting	Graphic Button	Description
Close Event Video		Click to close video popup. Once closed video popup, the grid will display original video on the grid.
Lock/Unlock popup video		Click to lock the popup video. The locked video won't be closed even the event status has finished. Click again to Unlock the popup video.
Instant Playback		Sync to playback. Current instant playback will be opened in playback tab. However, if instant playback runs in a secondary monitor, then the playback will be opened on the primary monitor. ▸ See also the Instant Playback of **toolbar content**

Snapshot		Takes snapshot. ▸ See also the Snapshot of **toolbar content**.
PTZ		Controls camera remote directional and zoom. ▸ See also the PTZ of **toolbar content**.
Manual Record Video		Records video manually. ▸ See also the Manual Record Video of **toolbar content**.
Audio		Enables/disables audio. ▸ See also the Audio of **toolbar content**.
Connection		Connects/disconnects camera. ▸ See also the Connection of **toolbar content**.
Content Setting		Choosing stream profile and fix aspect ratio. ▸ See also the Content Setting of **toolbar content**.

13.1.2.1 Instant Playback

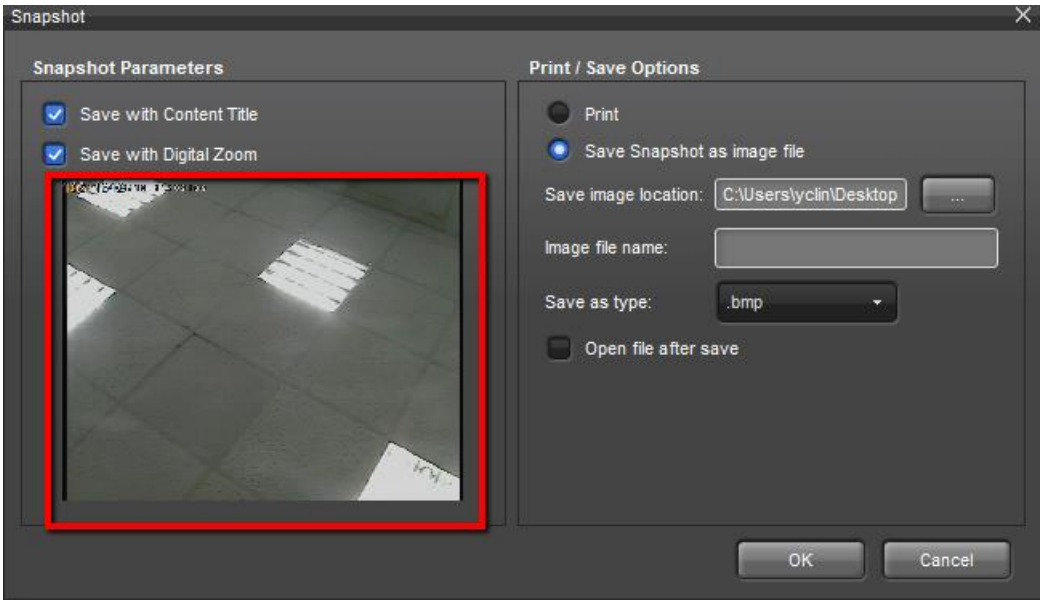
Click on the **Instant Playback** icon. You may playback video or reverse-playback video with this function. Hold the scroll handle in the middle can change the playback speed.

13.1.2.2 Snapshot

13.1.2.2.1 Snapshot one channel

Click on the **snapshot** icon in toolbar content and saves the snapshot of the current video channel at the current moment.

You may choose to export title names, enable digital zoom in exported data, save exported images to files or to printers.



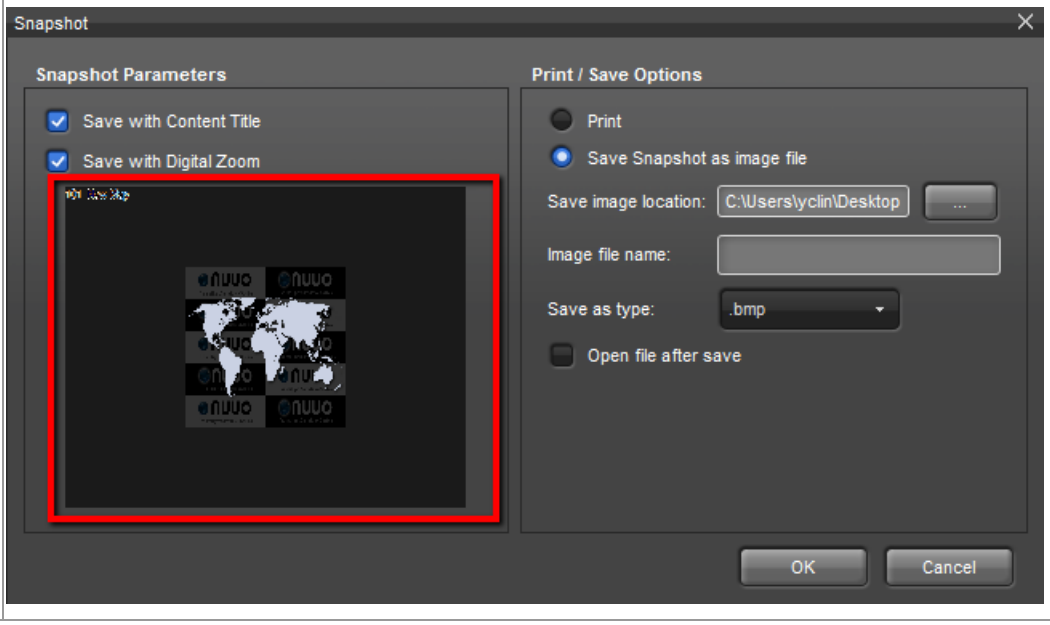
The featured settings are:

Setting	Description
Snapshot Parameters	There are two options available: save with Content title and save with Digital Zoom.
Print / Save Options	1. There are two options available: print and save **Snapshot** as image file.

Setting	Description	Default
Save image location	Selects the image save location.	--
Image file name	Edits the image file name.	--
Save as type	Selects the image save type.	.jpeg

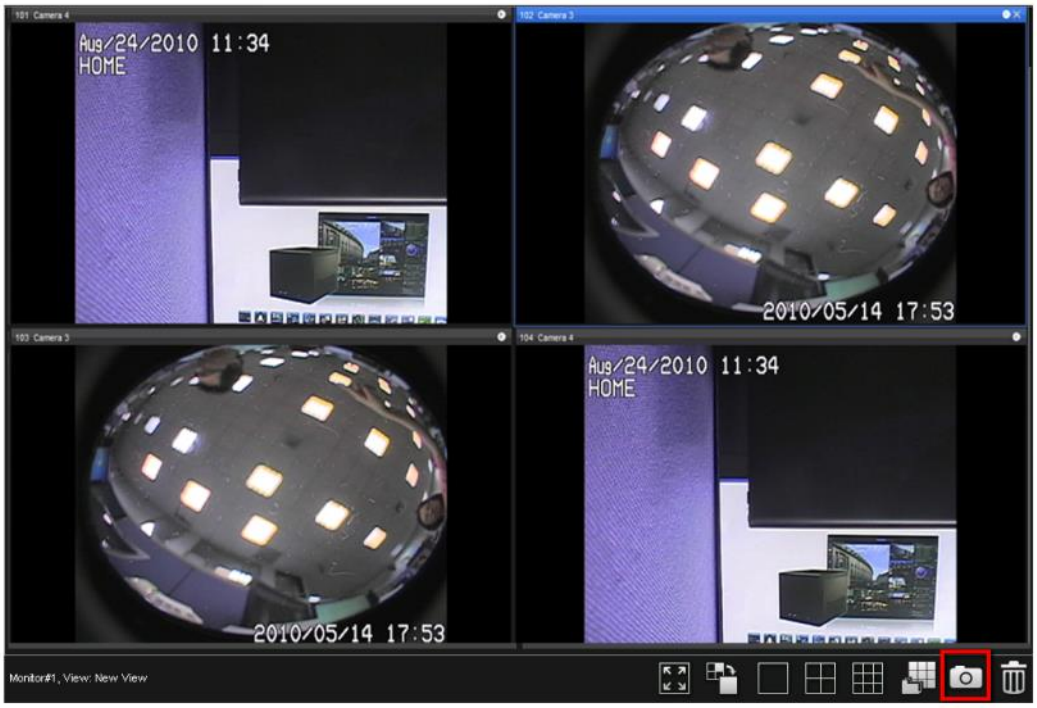
		There are two options available: .bmp and. jpeg.	

2. Enables/disable open file after save.

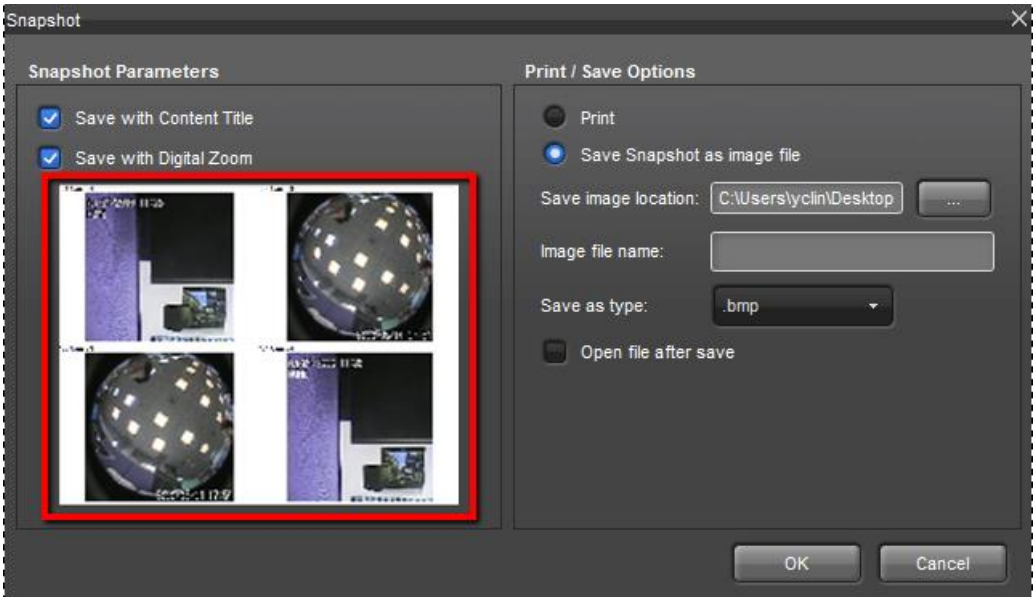
	Snapshot is available only with cameras, not with E-map and I/O.
	If “Open File after save” is checked, the snapshot will open after the snapshot is saved on disk.
	If a channel contains an E-map, then the status of the E-map will be snapshotted. If it contains I/O, then the I/O status will be snapshotted. 

13.1.2.2.2 Snapshot whole view area

If you want to snapshot all channels on the screen, you need to press the snapshot icon in view toolbar.



If the content of a channel is E-map or I/O panel, they will also be put in a snapshot.



The featured settings are:

Setting	Description
Snapshot Parameters	There are two options available: save with Content title and save with Digital Zoom.
Print / Save Options	3. There are two options available: print and save **Snapshot** as image file.

Setting	Description	Default

	Save image location	Selects the image save location.	--
	Image file name	Edits the image file name.	--
	Save as type	Selects the image save type. ▸ There are two options available: .bmp and. jpeg.	.jpeg

4. Enables/disable open file after save.

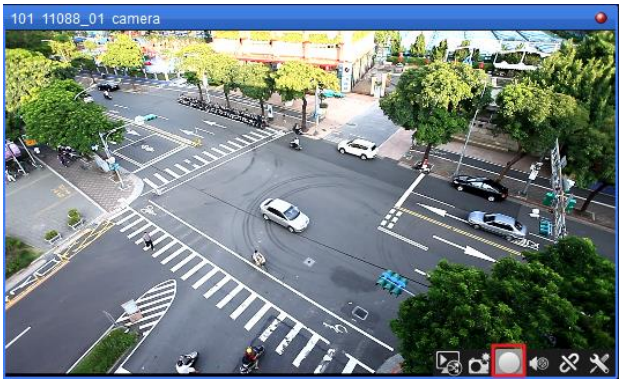
	Snapshot is available only with cameras, not with E-map and I/O.
	If “Open File after save” is checked, the snapshot will open after the snapshot is saved on disk.
	If a channel contains an E-map, then the status of the E-map will be snapshotted. If it contains I/O, then the I/O status will be snapshotted.

13.1.2.3 PTZ

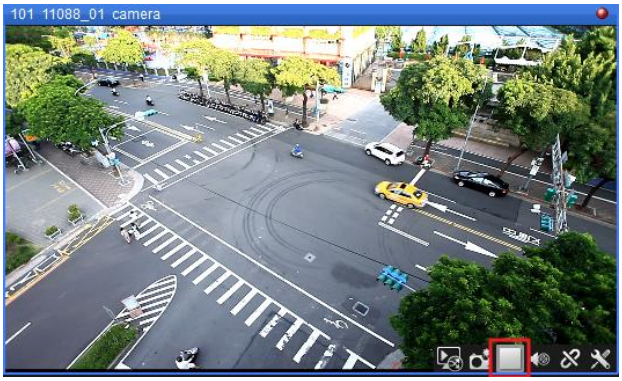
Please see the section of PTZ for details.

13.1.2.4 Manually Record Video

1. Click on the Start/Stop Recording icon on the tool bar.



2. When video is being recorded, the icon will become a square . Click it again to stop recording.



13.1.2.5 Audio

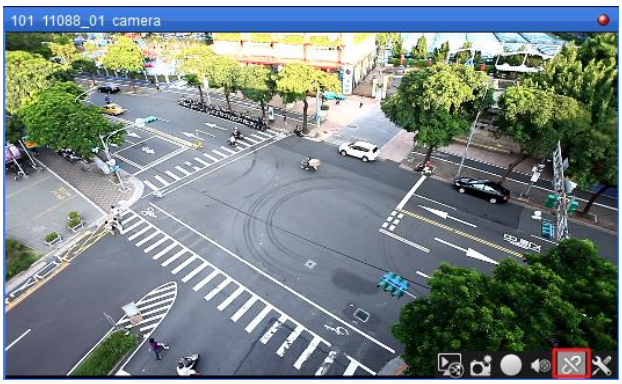
Presses the speaker icons to enable / disable audio from a camera.

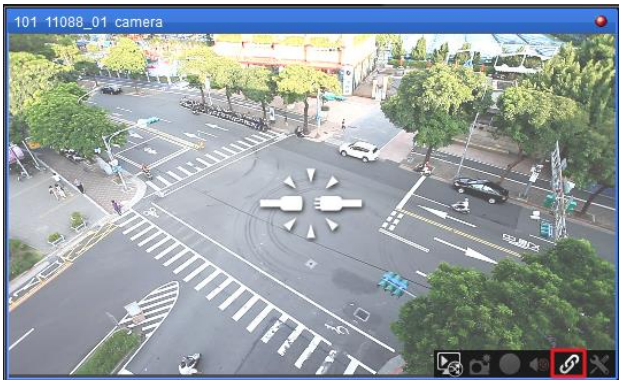
Please note that a camera must support audio for this function to work.

	If your camera supports audio but you cannot hear that in NuClient, please make sure: 1. Audio is enabled in the admin interface of the camera. 2. Cables are properly connected. 3. Audio is not muted in Windows.
	If multiple channels of video streams are running without enough bandwidth, it is possible to hear audio of poor quality. To solve this issue, you may try disconnecting a few cameras.
	After switching to different layouts, if a camera is not present in the current grid, you will not able to hear the audio of it.

13.1.2.6 Connection

Press the chain icon to connect to a camera and disconnect from a camera.





13.1.2.7 Content Settings

Content settings are a set of settings to configure stream profiles and aspect ratio. If a camera has dual streaming, then one of the video streams can be chosen to be displayed in Live View.

	Streaming video in different formats and resolutions will require the CPU on cameras to do extra video processing and it may overload a camera.

13.2 View List

A view is a collection of configurations including those of grid layouts, camera settings, aspect ratios, stream profiles, etc.

To know the featured on the **View**, see View.

13.3 PTZ Panel

In the panel, you may control both optical and digital pan/tilt/zoom of your cameras. Optical PTZ is enabled only when a camera has PTZ capability. Digital PTZ is achieved

purely by digital image processing, and it is enabled for all cameras.

13.3.1 PTZ

PTZ is a mechanism for remote directional and zoom control. PTZ is an abbreviation of Pan, Tilt, and Zoom. Pan refers to horizontal movement of a camera; Tilt refers to vertical movement of a camera; Zoom refers to the change in focal lengths.

13.3.1.1 Optical PTZ

The featured settings are:

Setting	Graphic Button	Description
PTZ		Controls the camera view by using the PTZ camera control panel to adjust the camera's view.
Zoom in		Zooms in of the area of interest.
Zoom out		Zooms out of the area of interest.
Focus near		Focuses near of the area of interest.
Focus far		Focus far of the area of interest.
Auto focus		Adjusts the focus point of the area of interest.

PTZ Preset(s)

Sets camera PTZ configurations.

The camera will be configured to the preset configurations when select a preset point.

- 16 preset points are available.

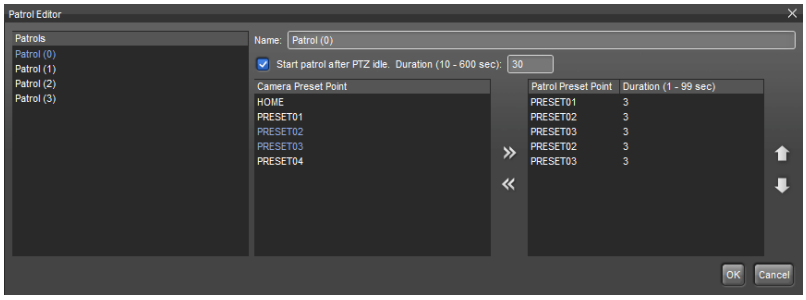
Setting	Description
Select one preset	Selects the **preset point**.
	Delete **preset point**.
	Sets **preset point**.

Patrol

Preset point group which enable user go to preset point automatically and stay at the preset point for the assigned time period.

- Four patrol groups are available.
- 32 preset points for a patrol group are available.

Setting	Description
Patrol (0)	Selects **Patrol**.
	Starts **Patrol**.
	Stops **Patrol**.
	Sets **Patrol**.



Setting	Description
Name	Edits **Patrol Name**.
Start patrol after PTZ idle	Restores patrol automatically when utilize PTZ and temporarily take over patrol process. - 1 to 60 seconds are available.
	Add preset point to **Patrol**.
	Delete preset point to **Patrol**.

Duration	Sets the duration between two preset points. ▸ 1 to 99 seconds are available.
	Moves the selected preset point up.
	Moves the selected preset point down.

	Optical PTZ is the default PTZ mode as long as a camera supports it.
	The names of preset may be scrambled if input Chinese/Japanese/Korean characters due to cameras do not support those character sets.
	Please assign preset point setting first before Patrol.
	For patrol, the preset point can be chose for multiple times.
	If user operate camera PTZ or go to preset point during patrol process, patrol will stop without manually stop patrol. If user enabled “Start patrol after PTZ idle” for this patrol, the patrol process will restore after assigned PTZ idle duration.

13.3.1.2 Digital PTZ

In contrast to optical PTZ, Digital PTZ is an image-processing algorithm used to magnify each pixel see in a video image. Since it is merely a software algorithm, digital PTZ is supported with any camera which NuClient connects to. Digital PTZ is supported both in Live View and Playback.

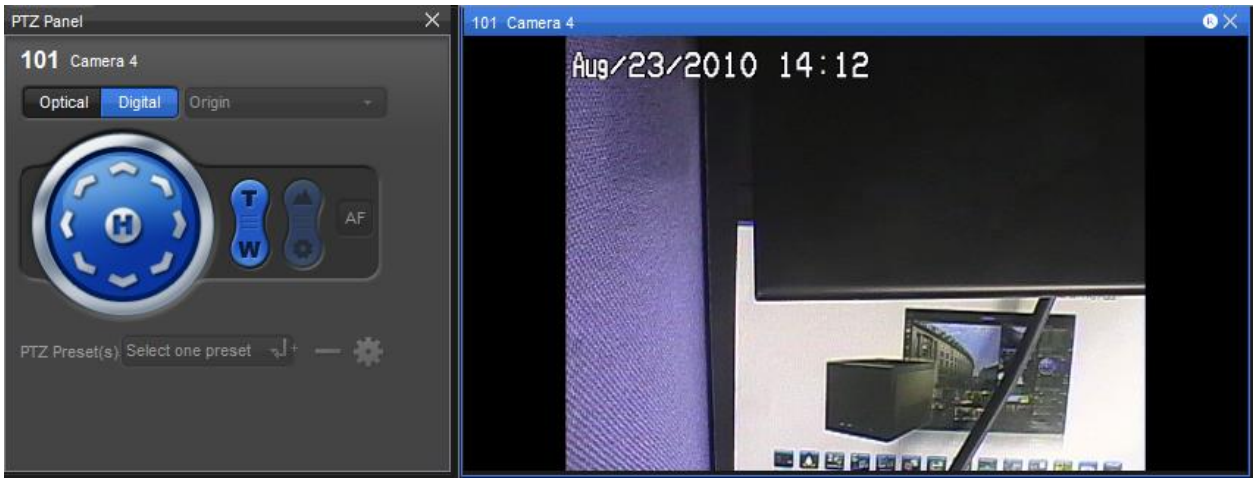
	Optical PTZ is supported only in Live View, while digital PTZ is supported both in Live View and Playback.

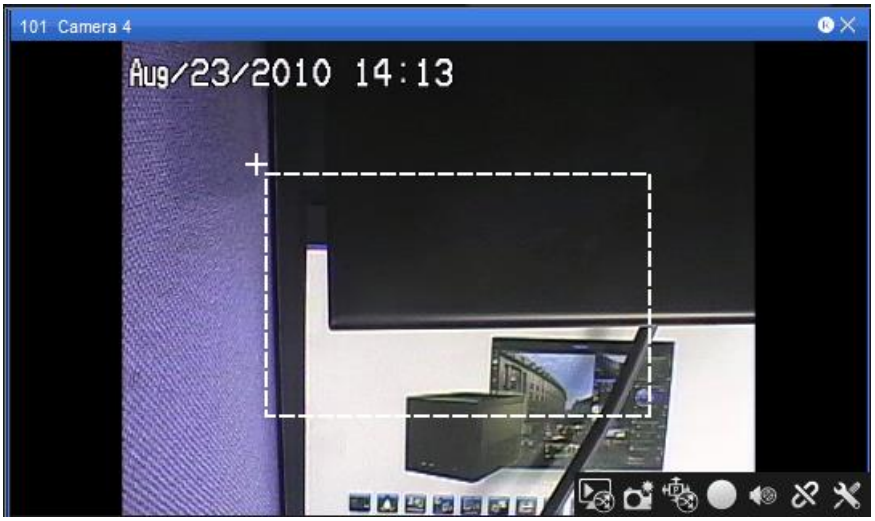
There are three ways of using digital PTZ in NuClient: draw a rectangle, use mouse wheel and use the on-screen buttons.

13.3.1.2.1 Draw a rectangle

Draw a rectangle area in view area. The covered area which is surrounded dashed lines will be magnified and stretched to the whole view area. As soon as the

rectangle is drawn, the view is smoothly zoomed into the area of interest.





In the corner, find a sub-window showing the full content of the current camera.

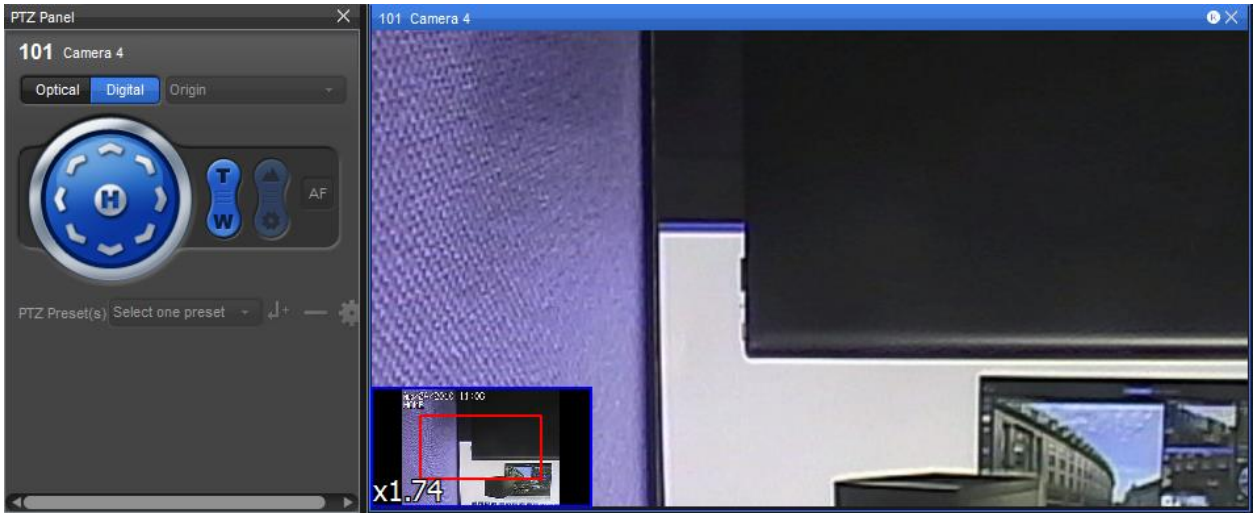
13.3.1.2.2 Use mouse wheel

Besides drawing a rectangle, it is even more intuitive to use mouse wheel to zoom in and zoom out. Drag-and-drop the view area to change viewport of the camera.

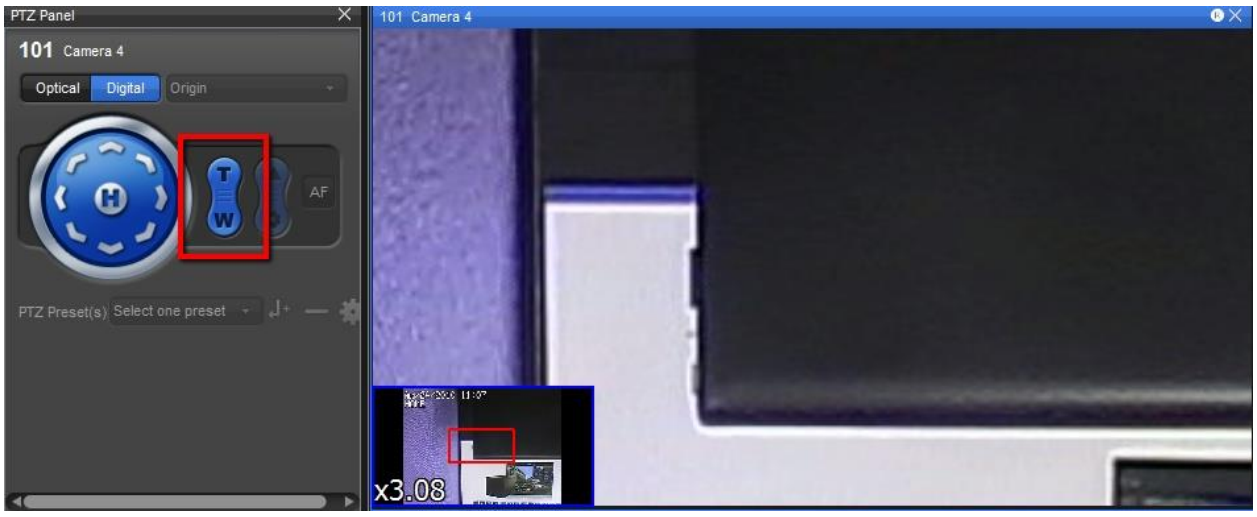
In the corner, find a sub-window showing the full content of the current camera.

13.3.1.2.3 Use the on-screen buttons

A set of control buttons are also available in PTZ controller.

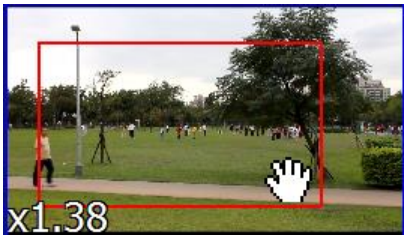


The button controls zoom-in and zoom-out.



The arrow wheel controls pan and tilt of the current camera.

The Home button will show the entire video image in one view area.

	Move the red rectangle on the sub window to adjust the place to view. 

13.3.2 Fisheye Dewarp

13.3.2.1 NUUO Fisheye Dewarp

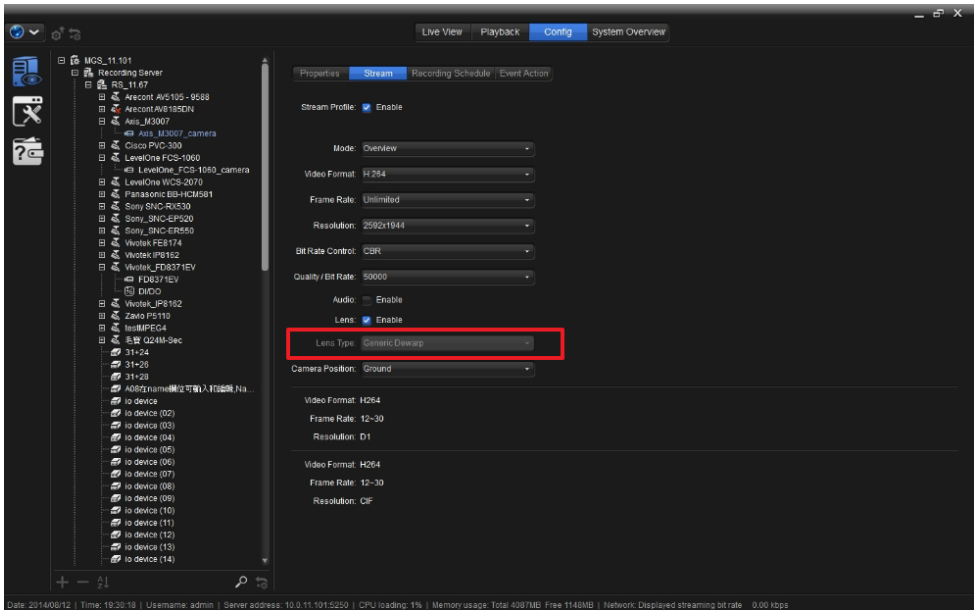
NUUO Fisheye Dewarp is a generic mechanism for dewarping all kinds of fisheye camera or camera with ImmerVision lens.
NuClient supports the Original mode, PTZ mode, Quad mode, and Perimeter mode.

To access NUUO fisheye dewarp setting:

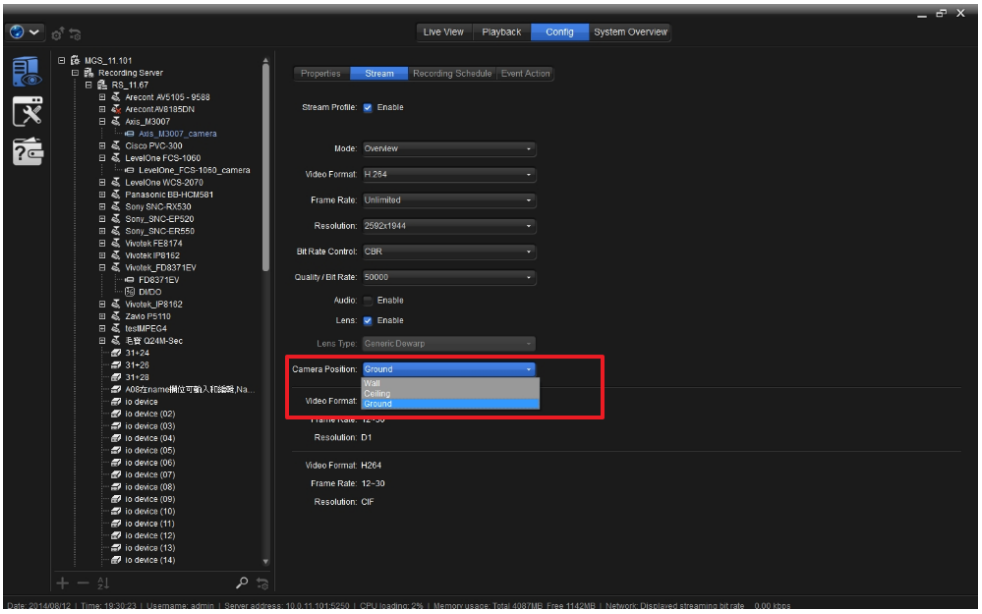
1. On **Config Tab**, access the **Video Device** as described in Configure A Video Device.

2. Select the fisheye camera and go to stream tab.

3. Select Lens type as Generic Dewarp.



4. Select camera position

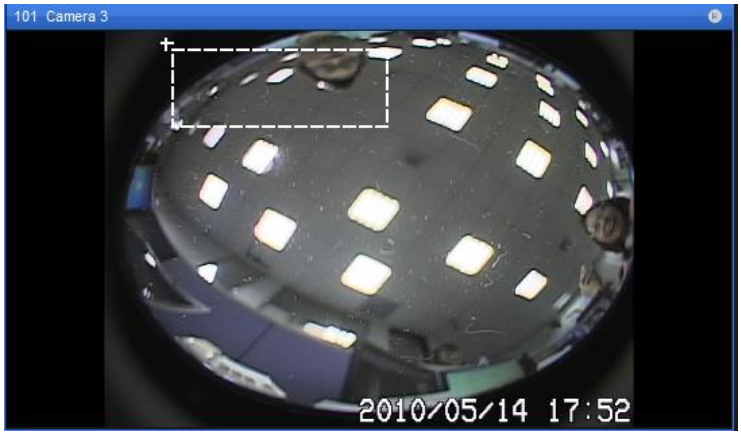


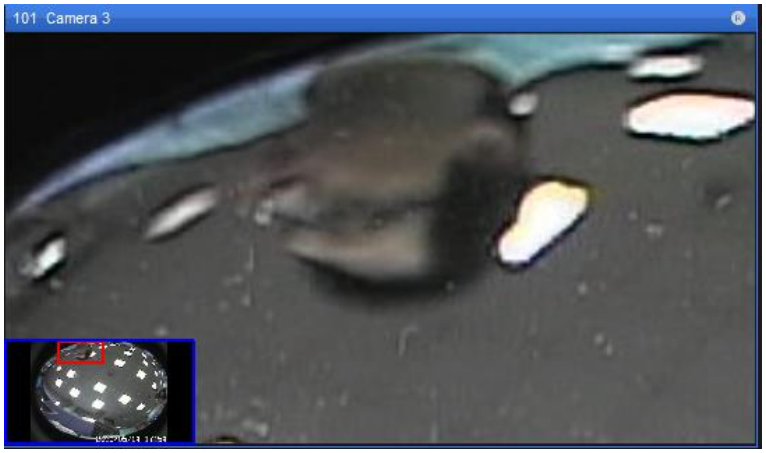
5. After Generic Dewarp is enabled, you will see the video on NuClient become fisheye warped image.

13.3.2.1.1 The Modes of NUUO Fisheye Dewarp

After NUUO Generic Dewarp is enabled, you may see the selection menu on the PTZ controller is enabled and it has four different options: Original mode, PTZ mode, Quad mode, and Perimeter mode.

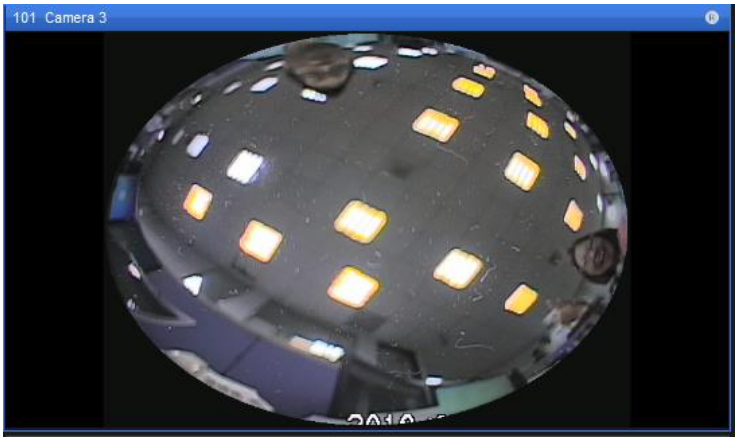
13.3.2.1.1.1 Original Mode

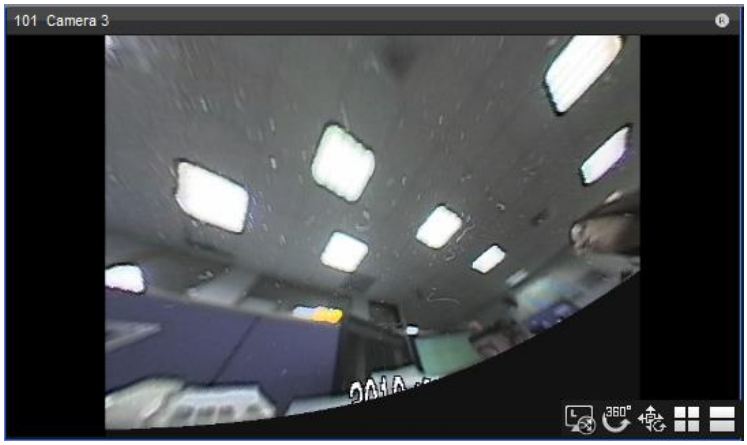




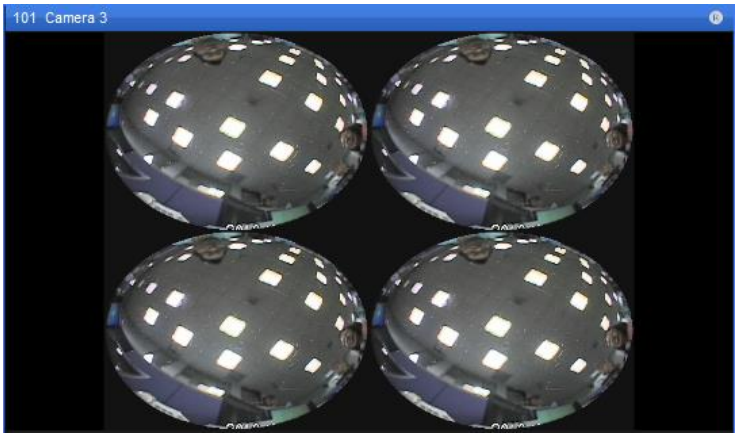
As soon as the rectangle is drawn, the view is smoothly zoomed into the area of interest.

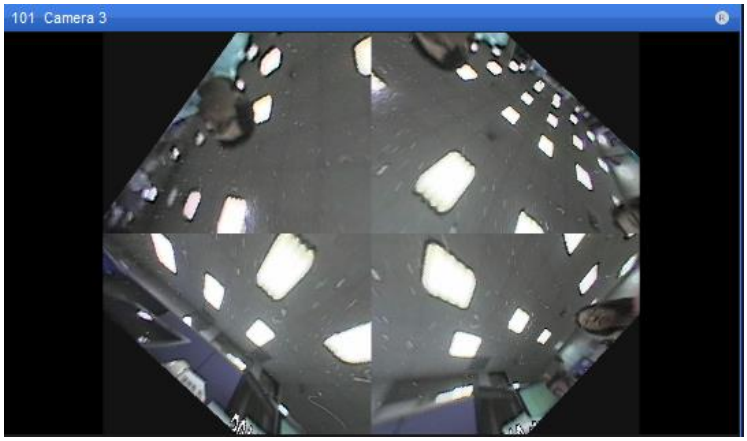
13.3.2.1.1.2 PTZ Mode



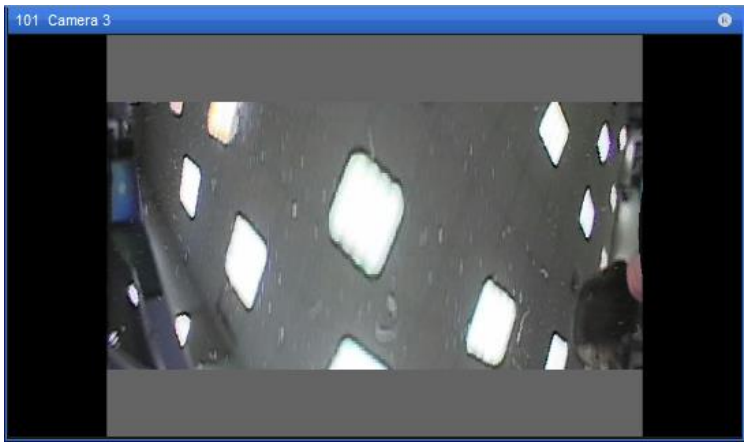


13.3.2.1.1.3 Quad Mode





13.3.2.1.1.4 Perimeter Mode



On NuClient grid, there is fast setting. In the content toolbar in the corner, there is an icon

. Click on it will lead you to the function icons of PTZ mode.

The featured settings are:

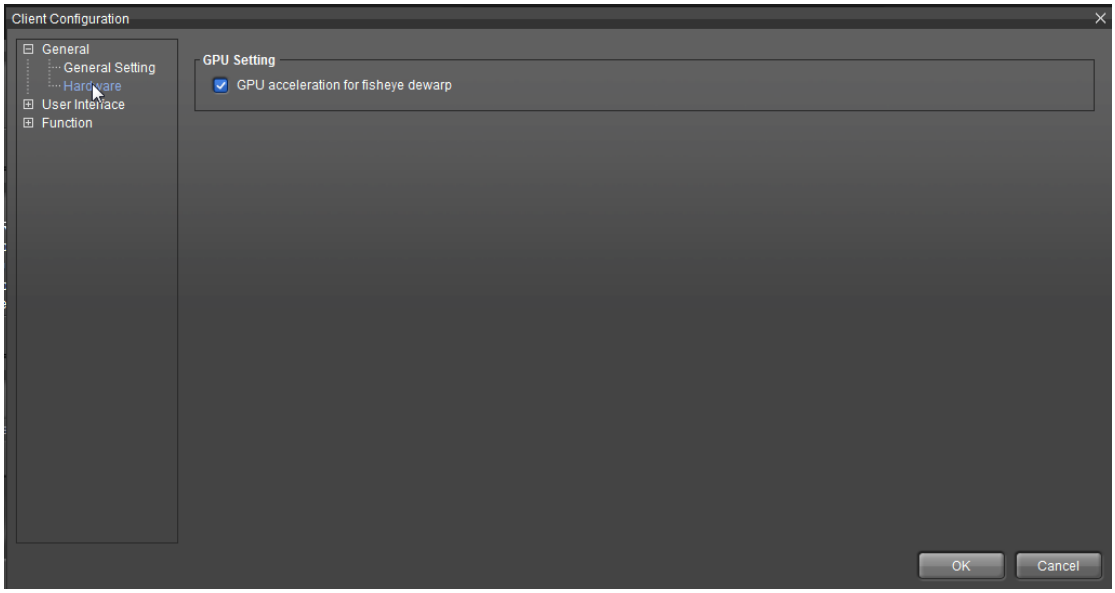
Graphic Button	Description
	Return to the toolbar of live view
	Original mode. The original image from the fisheye camera without being processed by any image processing algorithm.
	PTZ mode. Pan, Tilt & Zoom are computed by NuClient
	Quad mode. Video is split into 4 separate views simultaneously.
	Perimeter mode. In this mode, video is split into a horizontal view of 180°

13.3.2.1.2 Enable GPU Accelerate for NUUO Fisheye Dewarp

Dewarp video from fisheye camera is resource consuming for client. NUUO Crystal™ support GPU acceleration for the dewarp of video from fisheye camera to best achieve the quality demand of viewing.

To enable GPU acceleration for fisheye dewarp:

1. Go to **Global** .
2. Choose **Client Configuration**|**General**|**Hardware** to enable GPU acceleration.



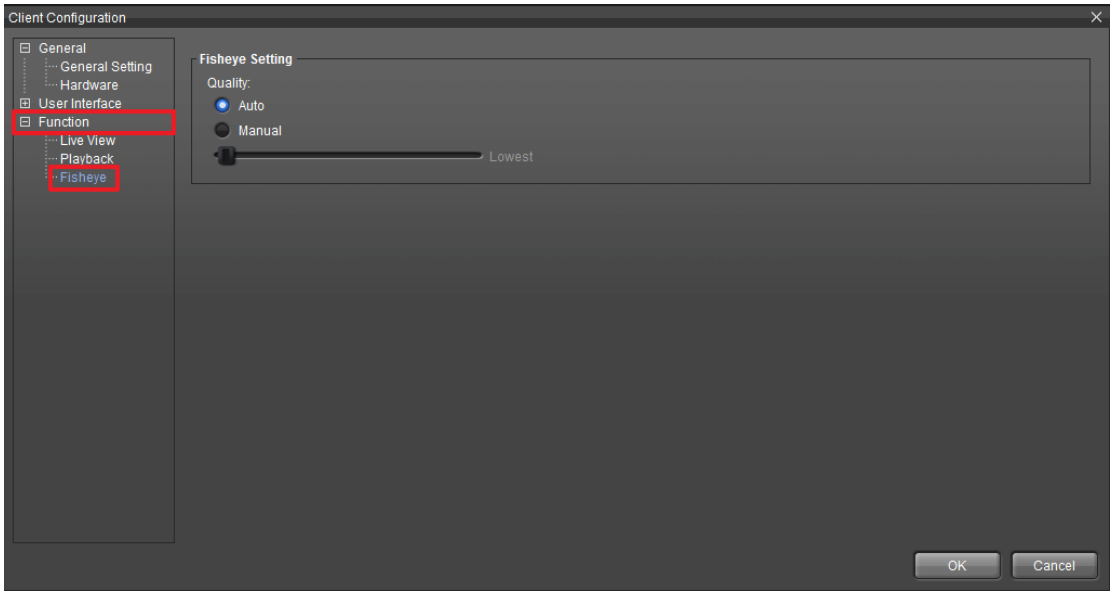
	The GPU accelerate will be default enabled if the computer which is installed Nuclient/NuMatrix has GPU.

13.3.2.1.3 Adjust quality of Fisheye Dewarp

Adjust the video quality of fisheye video dewarp to balance client performance and dewarp quality.

To adjust the quality of fisheye dewarp:

1. Go to **Global** .
2. Choose **Client Configuration** | **Function** | **Fisheye** to set up the quality.

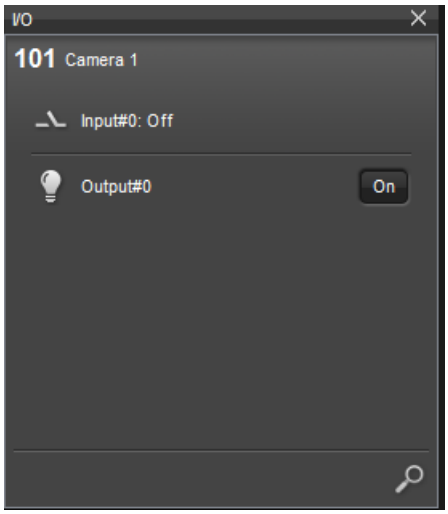


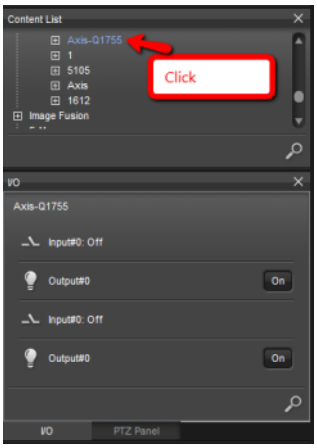
The 2 modes of settings are:

Mode	Description
Auto	▸ Display **Low** quality when the dewarped video is dragging and doing pan and tilt. ▸ Display **Good** quality when the dewarped video is not dragging to pan and tilt.
Manual	Five quality levels are available to be choose: **Lowest**, **Low**, **Normal**, **Good**, **Best**

13.4 I/O Control Panel

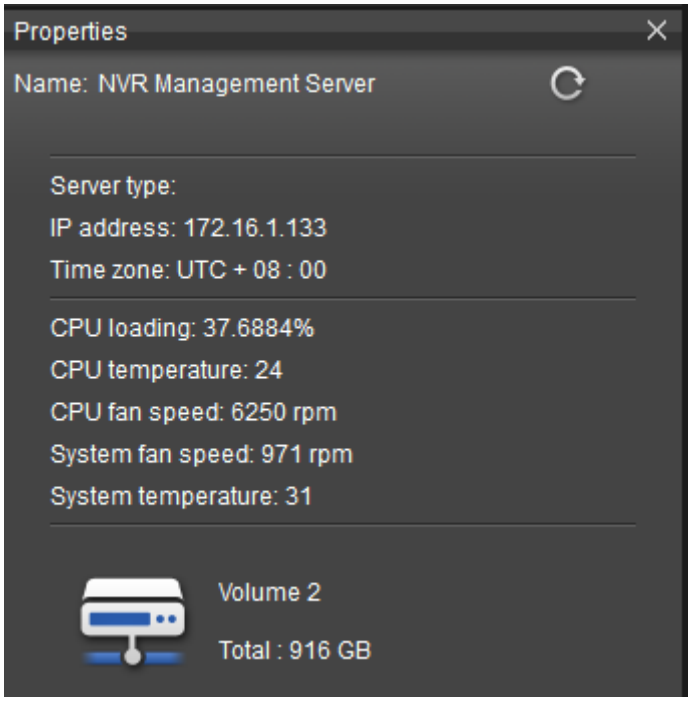
The status of I/O devices is displayed in panel. You can enable trigger outputs using this panel.



	If the current content is an image fusion, in this panel, all of the I/O devices will be displayed in one list. You may name the I/O devices on Crystal server.
	I/O configurations of a camera can be immediately shown by clicking on it in Content List. 

13.5 Content Properties Panel

Properties panel shows the information of the current content in a focus channel. The display information varies according to the type of content in a grid cell and according to the type of the current tab.



Setting	Displayed information in Live View
Server	Server Type IP address Time zone CPU loading CPU temperature CPU fan speed System fan speed System temperature
Camera	Camera name Video stream profile Video format Resolution FPS (Frames per second) Bit-rate Display type
E-map	Map name Map description
Image fusion	Camera name Video stream profile Video format Resolution

	Content Properties Panel is a read-only. The properties cannot be modified through this widget.
	Clicking on a camera icon in an E-map will show only the camera name and the video

	format in the properties panel currently.

13.6 Event List

Event list shows latest events from a camera or from the monitor of system resources, with date/time information and the source. New events are constantly appended to the top of the list and old events will be removed from the list.

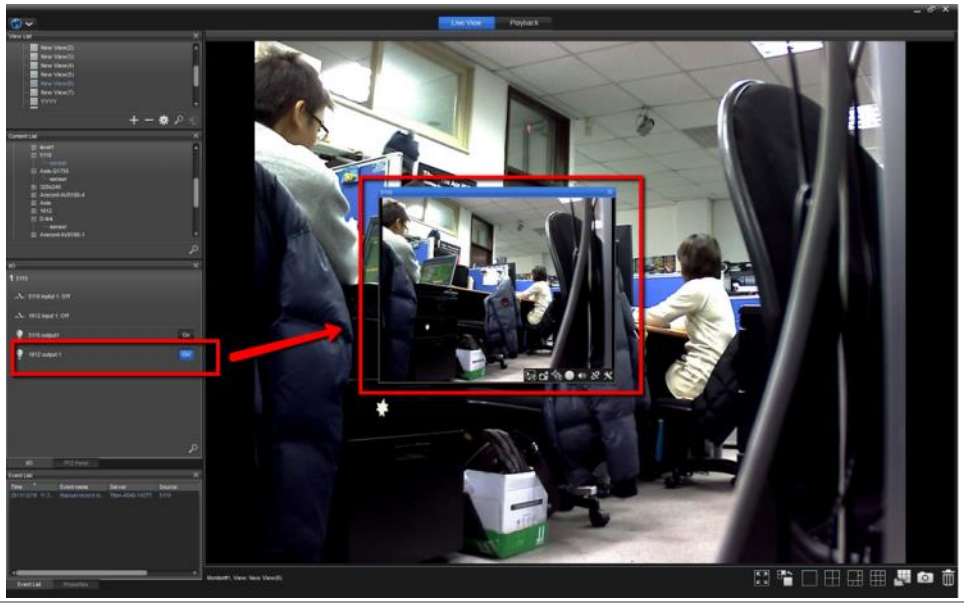
Event List
Time
Event name
Source
2011/07/05 00:53:24 Motion started Camera 4
2011/07/05 00:53:23 Motion stopped Camera 4
2011/07/05 00:53:22 Motion stopped Camera 4
2011/07/05 00:53:22 Motion started Camera 4
2011/07/05 00:53:21 Motion started Camera 4
2011/07/05 00:53:20 Motion stopped Camera 4
2011/07/05 00:53:19 Motion started Camera 4
2011/07/05 00:53:18 Motion stopped Camera 4
2011/07/05 00:53:17 Motion stopped Camera 4
2011/07/05 00:53:17 Motion started Camera 4
2011/07/05 00:53:16 Motion started Camera 4
2011/07/05 00:53:15 Motion stopped Camera 4
2011/07/05 00:53:14 Motion started Camera 4
2011/07/05 00:53:13 Motion stopped Camera 4
2011/07/05 00:53:12 Motion stopped Camera 4
2011/07/05 00:53:12 Motion started Camera 4
2011/07/05 00:53:10 Motion stopped Camera 4
101 Camera 4

	If returned results exceed **1000** records, NuClient will pop up a dialog to refine the query.

The list of possible events:

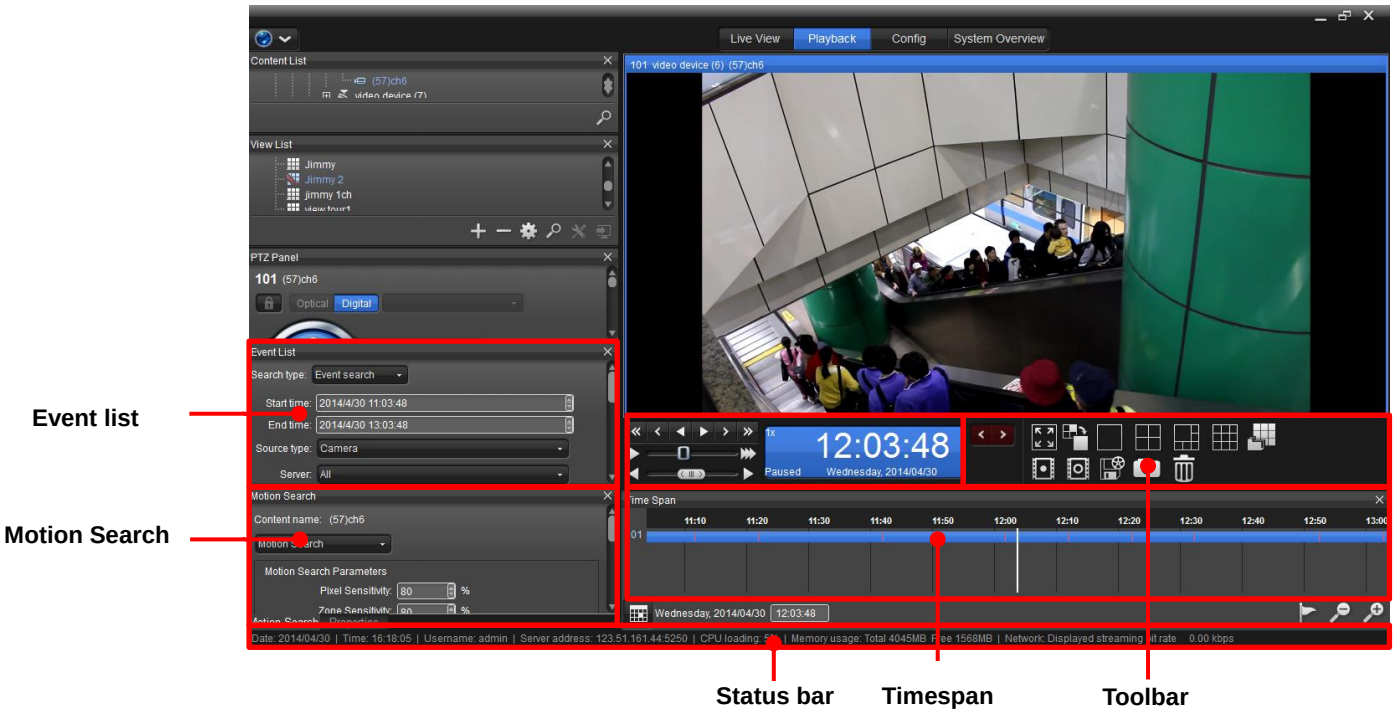
Setting	Displayed information in Live View
Camera	Motion started Motion stopped Recording on manual started Recording on manual stopped Unit connection lost
Digital Input	Input signal on Input signal off Unit connection lost
Server	Disk abnormal Auto backup started Auto backup stopped Auto backup failed Recording setting is changed to always recording Recording setting is changed to schedule recording Recording setting is changed to no recording

When an event is triggered and with associated camera, instant playback of the camera will pop up manually. At most 3 instant playback windows can be opened.



14. Playback

The common panels are the same as those seen in Live View page, but there are some extra panels in Playback page including Motion Search, Time Navigation, and Timline.



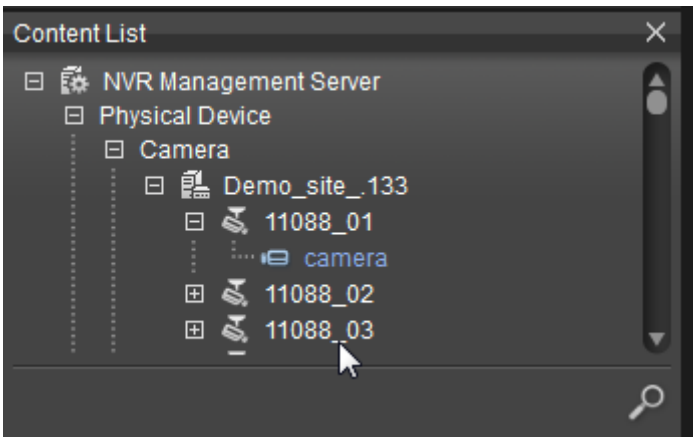
	Live View can be displayed both in the primary monitor and in secondary monitors, but Playback can open only in the primary monitor.

14.1 Content List

Content List shows all the devices a user have permission to access. A device can be a camera, a I/O device, an image fusion, or an E-map.

Each device node as shown in the screenshot below can be expanded to see the details of each device. Expanding each device will show subordinate items, such as

sensors on cameras.



14.1.1 Watch Recorded Video

When switching from Live View to Playback, View List, Content List, and event list on the Live View page are identical with the ones on Playback page. Therefore, if you have managed cameras and views, you can select it to check recorded video directly. If you haven't, please refer to the View section to add view and camera.

14.1.2 Toolbar Content

When mouse is hovering over a video channel, the video toolbar provides several quick buttons of functions below:

Graphic Button	Description
	Snapshot
	Enable/disable audio
	Change the aspect ratio of a video

14.2 View List

A view is a collection of configurations including those of grid layouts, camera settings, aspect ratios, stream profiles, etc.

14.3 PTZ Panel

In the panel, you may control both optical and digital pan/tilt/zoom of your cameras. Optical PTZ is enabled only when a camera has PTZ capability. Digital PTZ is achieved purely by digital image processing, and it is enabled for all cameras.

14.3.1 PTZ

PTZ is a mechanism for remote directional and zoom control. PTZ is an abbreviation of Pan, Tilt, and Zoom. Pan refers to horizontal movement of a camera; Tilt refers to vertical movement of a camera; Zoom refers to the change in focal lengths.
On Playback PTZ panel, Digial PTZ is available for recorded video.

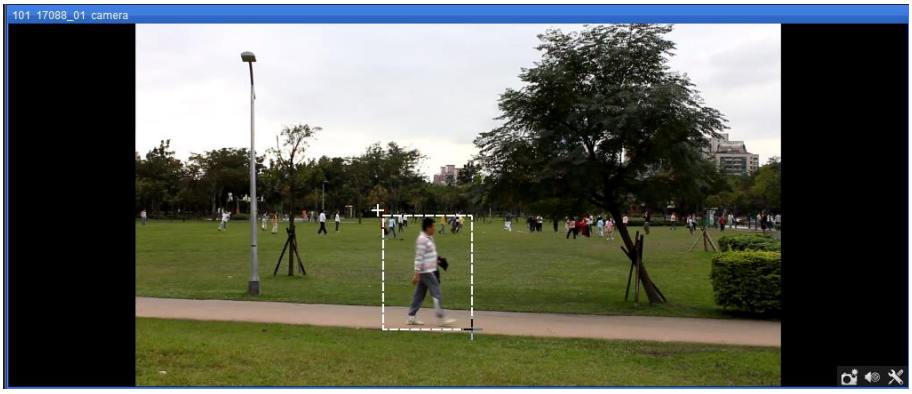
14.3.1.1 Digital PTZ

In contrast to optical PTZ, Digital PTZ is an image-processing algorithm used to magnify each pixel see in a video image. Since it is merely a software algorithm, digital PTZ is supported with any camera which NuClient connects to. Digital PTZ is supported both in Live View and Playback.

There are three ways of using digital PTZ in NuClient: draw a rectangle, use mouse wheel and use the on-screen buttons.

14.3.1.1.1 Draw a rectangle

Draw a rectangle area in view area. The covered area which is surrounded dashed lines will be magnified and stretched to the whole view area. As soon as the rectangle is drawn, the view is smoothly zoomed into the area of interest.



In the corner, find a sub-window showing the full content of the current camera.

14.3.1.1.2 Use mouse wheel

Besides drawing a rectangle, it is even more intuitive to use mouse wheel to zoom in and zoom out. Drag-and-drop the view area to change viewport of the camera.

In the corner, find a sub-window showing the full content of the current camera.

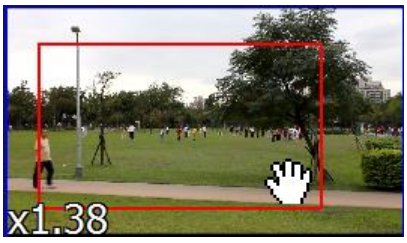
14.3.1.1.3 Use the on-screen buttons

A set of control buttons are also available in PTZ controller.

The button controls zoom-in and zoom-out.

The arrow wheel controls pan and tilt of the current camera.

The Home button will show the entire video image in one view area.

	Move the red rectangle on the sub window to adjust the place to view. 

14.3.2 Fisheye Camera Dewarp

14.3.2.1 NUUO Fisheye Camera Dewarp

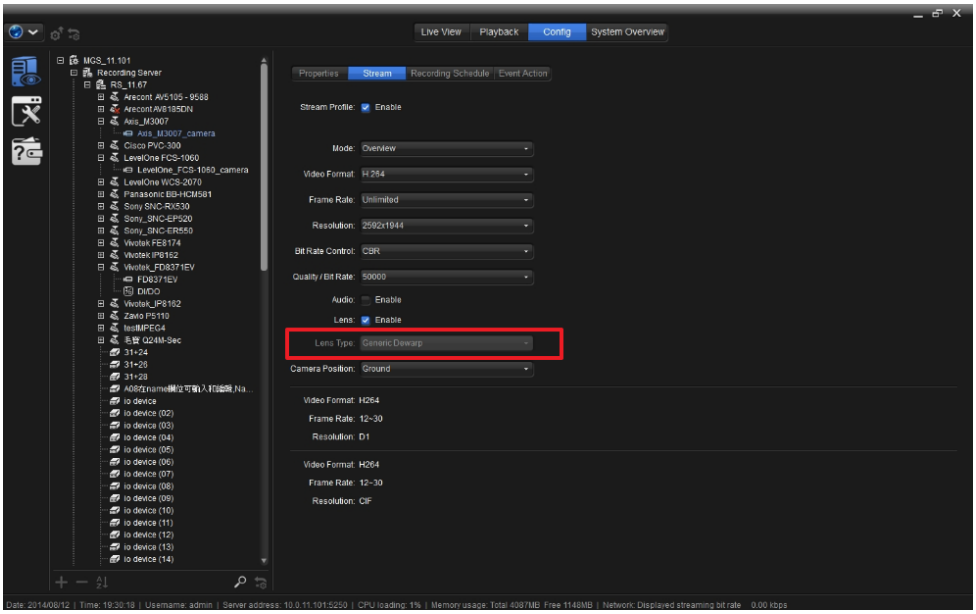
NUUO Fisheye Camera Dewarp is a generic mechanism for dewarping all kinds of fisheye camera or camera with ImmerVision lens.
NuClient supports the Original mode, PTZ mode, Quad mode, and Perimeter mode.

To access NUUO fisheye camera dewarp setting:

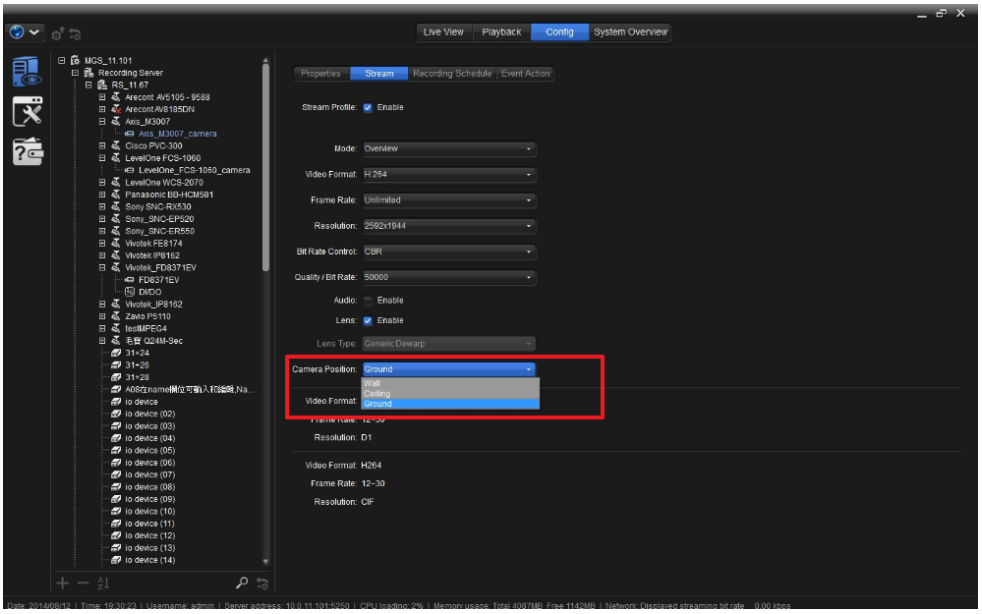
1. On **Config Tab**, access the **Video Device** as described in Configure A Video Device.

2. Select the fisheye camera and go to stream tab.

3. Select Lens type as Generic Dewarp.



4. Select camera position

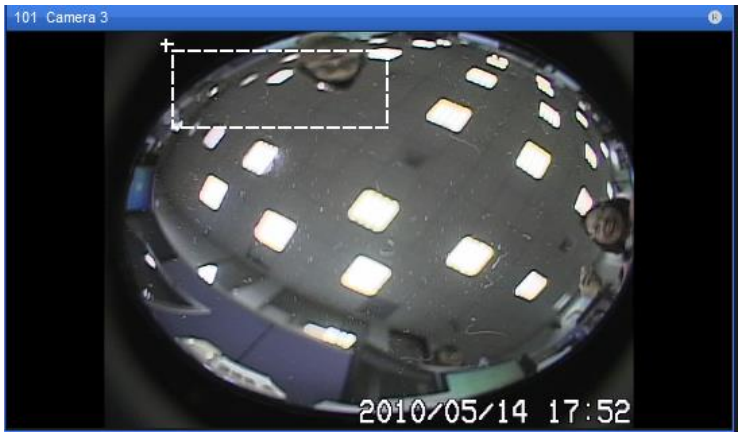


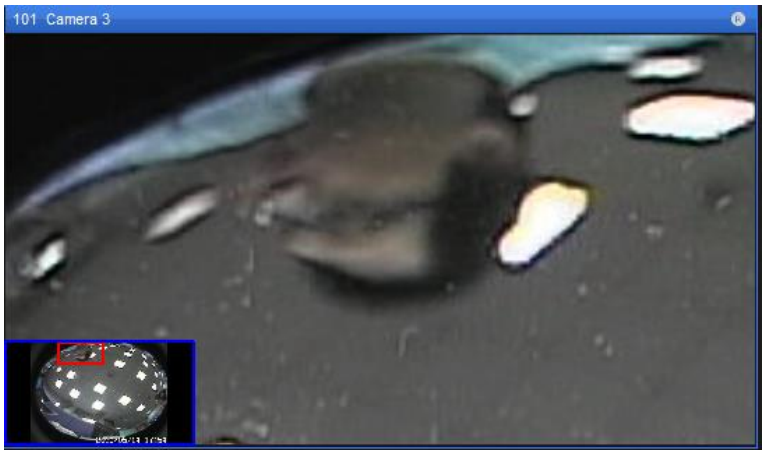
5. After Generic Dewarp is enabled, you will see the video on NuClient become fisheye warped image.

14.3.2.1.1 The Modes of NUUO Fisheye Camera Dewarp

After NUUO Generic Dewarp is enabled, you may see the selection menu on the PTZ controller is enabled and it has four different options: Original mode, PTZ mode, Quad mode, and Perimeter mode.

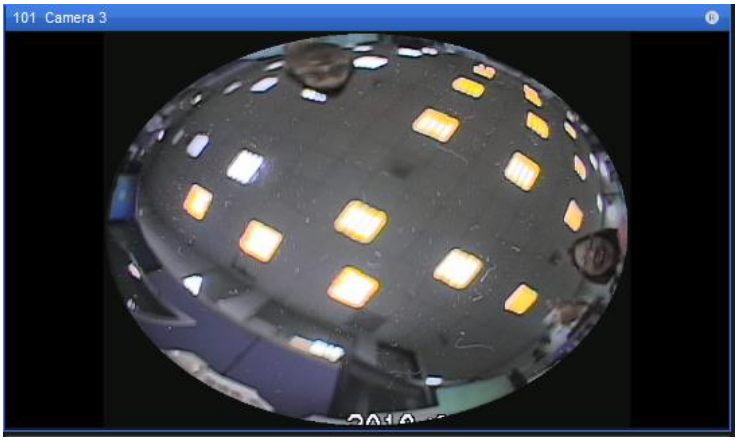
14.3.2.1.1.1 Original Mode

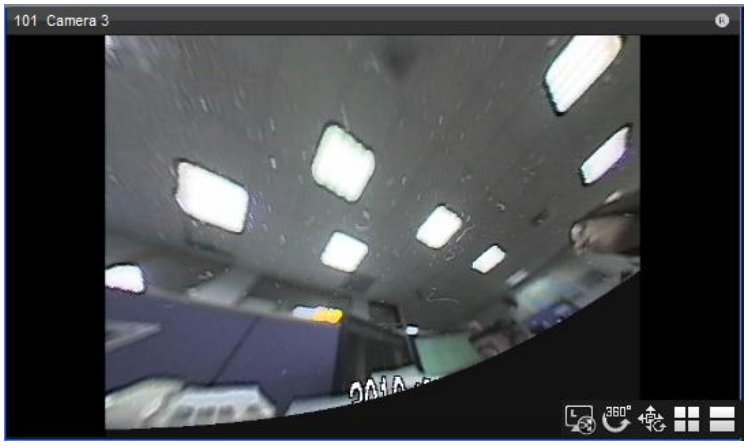




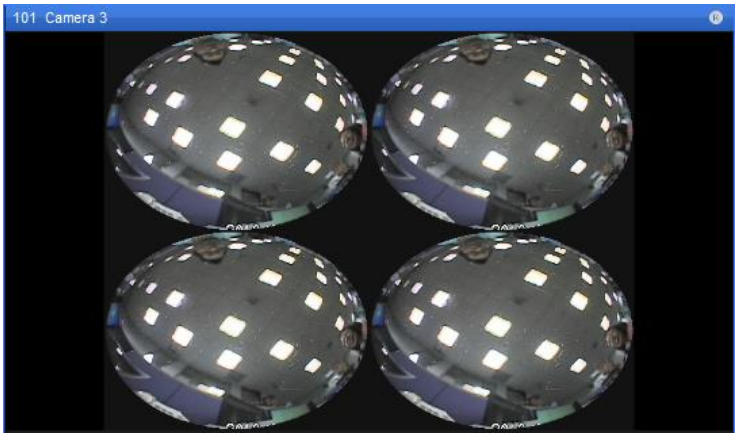
As soon as the rectangle is drawn, the view is smoothly zoomed into the area of interest.

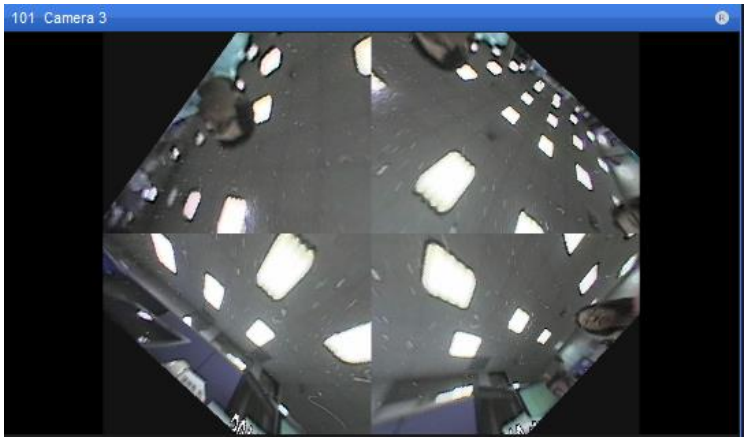
14.3.2.1.1.2 PTZ Mode



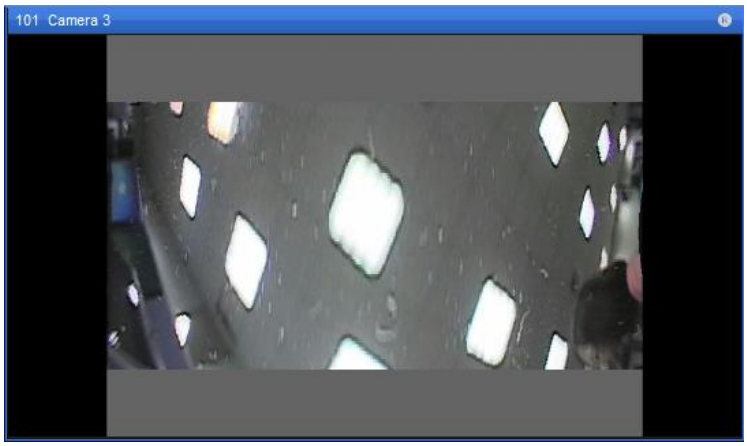


14.3.2.1.1.3 Quad Mode





14.3.2.1.1.4 Perimeter Mode



On NuClient grid, there is fast setting. In the content toolbar in the corner, there is an icon

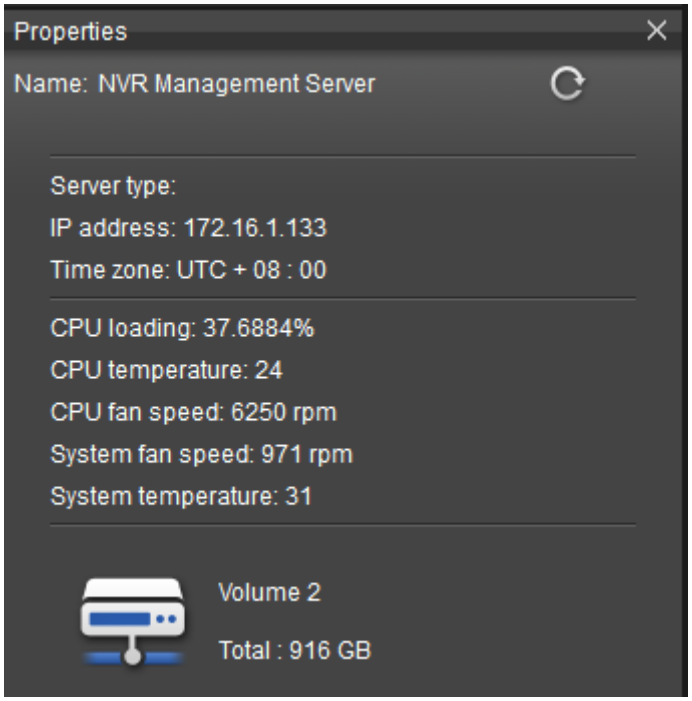
. Click on it will lead you to the function icons of PTZ mode.

The featured settings are:

Graphic Button	Description
	Return to the toolbar of live view
	Original mode. The original image from the fisheye camera without being processed by any image processing algorithm.
	PTZ mode. Pan, Tilt & Zoom are computed by NuClient
	Quad mode. Video is split into 4 separate views simultaneously.
	Perimeter mode. In this mode, video is split into a horizontal view of 180°

14.4 Content Properties Panel

Properties panel shows the information of the current content in a focus channel. The display information varies according to the type of content in a grid cell and according to the type of the current tab.

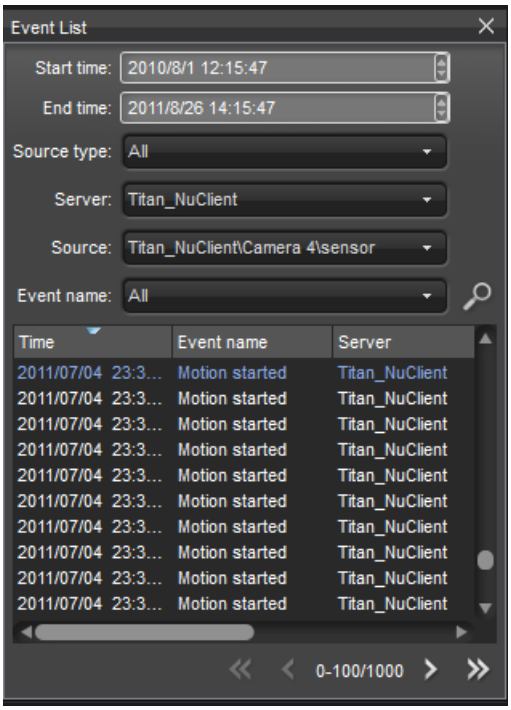


Setting	Displayed information in Live View
Server	Server Type IP address Time zone CPU loading CPU temperature CPU fan speed System fan speed System temperature
Camera	Camera name Video stream profile Video format Resolution FPS (Frames per second) Bit-rate Display type
E-map	Map name Map description
Image fusion	Camera name Video stream profile Video format Resolution

	Clicking on a camera icon in an E-map will show the camera name and the video format in the properties panel.

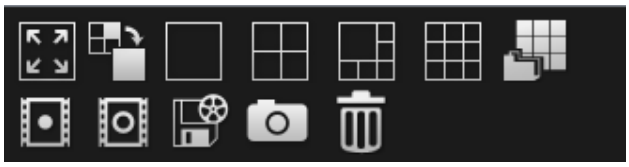
14.5 Event List

The event list in Playback is slightly different and it offers a search interface with several parameters to locate events in recording files.



14.6 Toolbar

The toolbar icons are a quick interface for you to operate functions, for example: change grid, export, snapshot and remove schedule.



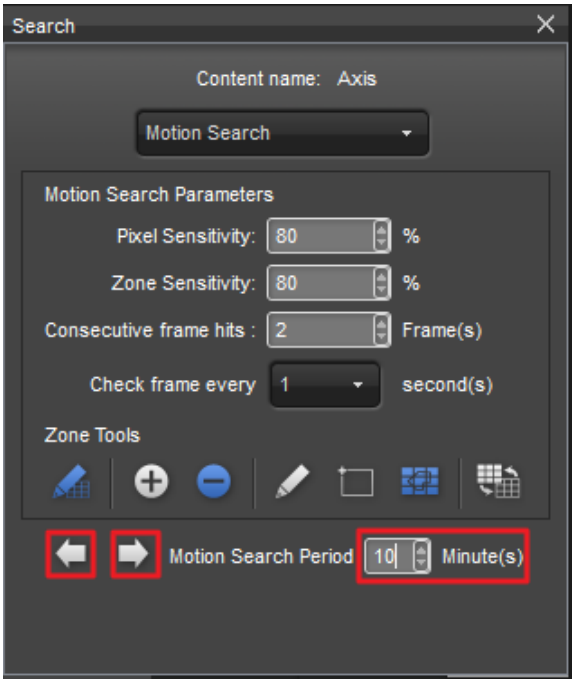
The featured settings are:

Graphic Button	Description
	Toggle full-screen
	Toggle single grid

	The favorite grid layouts. This is configurable in Client Configuration.
	Switch different grid layouts
	Set cue-in point
	Set cue-out point
	Export video
	Take a snapshot
	Remove selected channels

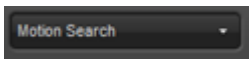
14.7 Motion Search

Motion search is the utility that enables you to search for the video frames with motion in the video quickly and accurately.



The featured settings are:

Setting/Graphic Button	Description	Default

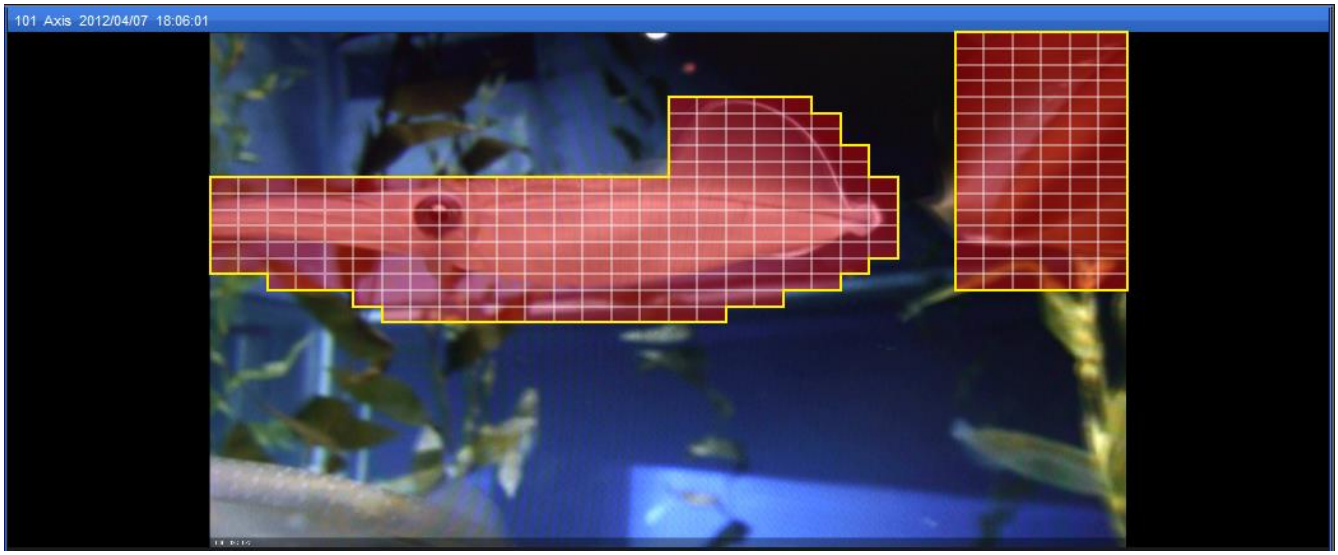
<table>
<tr><td>Content name</td><td>Shows the content name.</td><td>--</td></tr>
<tr><td> 
</td><td>Sets the search type.</td><td>--</td></tr>
<tr><td>Motion Search Parameters</td><td>Sets motion search parameters below:
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Pixel Sensitivity</td><td>It refers to the pixel change between two compared frames. 90% indicates that above 90% of the pixels between two frames are different.
▸ The value ranges from 1% to 99%.</td><td></td></tr>
<tr><td>Zone Sensitivity</td><td>It refers to the percentage of different grid boxes between two compared frames. 80% indicates that when more than 20%, that is 100% – 80%, of the content of the selected grid boxes is different, one motion event will be issued. The higher the value is, the more sensitive the detector is.
▸ The value ranges from 1% to 99%.</td><td></td></tr>
<tr><td>Consecutive Frame Hits</td><td>It refers to the minimum number of frames with motion to trigger a motion. Setting it to 2 means that a motion will be detected only when a motion spans over at least 2 frames.
▸ The value ranges from 1 to 30 frames.</td><td></td></tr>
<tr><td>Check frames every __ seconds</td><td>It refers to the number of seconds between two compared frames.
▸ The number can range from</td><td>1 sec.</td></tr>
</table></td><td>--</td></tr>
</table>

	1/60, 1/30, 1/20, 1/15, 1/10, 1/5, 1/3, 1/2, 1, 2, 5, 10, 15, 30, 40, 50, 60.	
	Enables/disables motion search	
	Selects detection region	
	Deselects detection region	
	Selects/deselects an region	
	Draws a rectangle	
	Selects/deselects all	
	Inverts selection / de-selection	
	Moves to the backward search.	--
	Moves to the forward search.	--
Motion search period __ minute(s)	Sets the motion search interval.	10 minutes

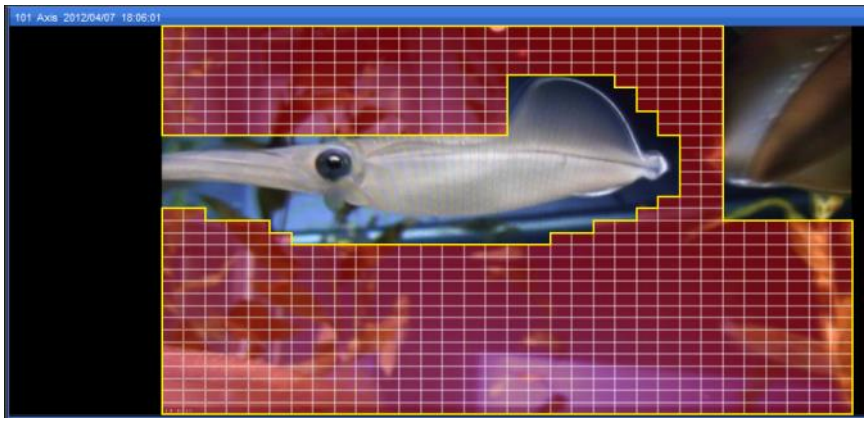
1. Select an active channel and go to the motion search tab.
2. Click on the icon and motion search will be enabled.

When motion search is enabled, the content tool bar of a content cell will be disabled. To enable the toolbar, please disable motion search by clicking again.

3. By default, the whole visible region is not selected, and the plus icon is default enabled.
4. You may start to select the areas of interest. You can combine and to select the region you need, or select to select all region.
5. The selected regions will show in red.



6. Pressing to invert the selection/de-selection.



7. After the region selection is done, you may click on the search icon at the button of the tab.

8. refers to backward search and refers to forward search. By default, the search period is 10 minutes.

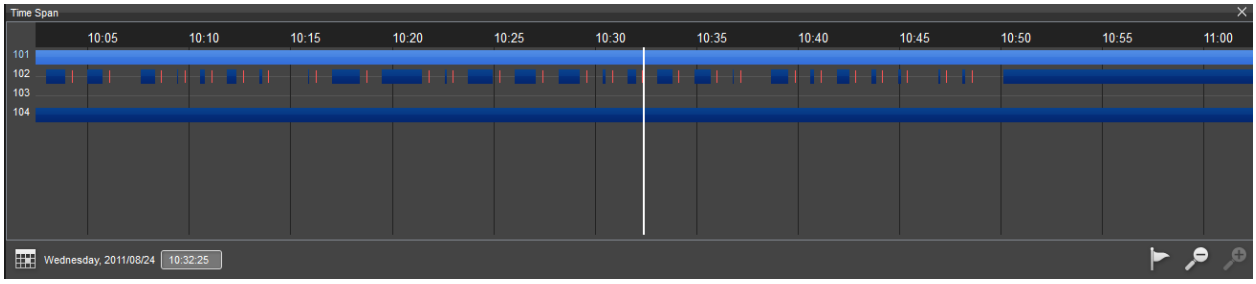
	Motion search does not support search under digital PTZ or ImmerVision mode.

14.8 Timeline

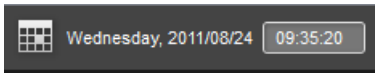
Timeline is a user-friendly representation of time and recorded data. You may not only quickly have an overview of the time span of video files, but also quickly locate the video at a specified time.

14.8.1 Search in Timeline

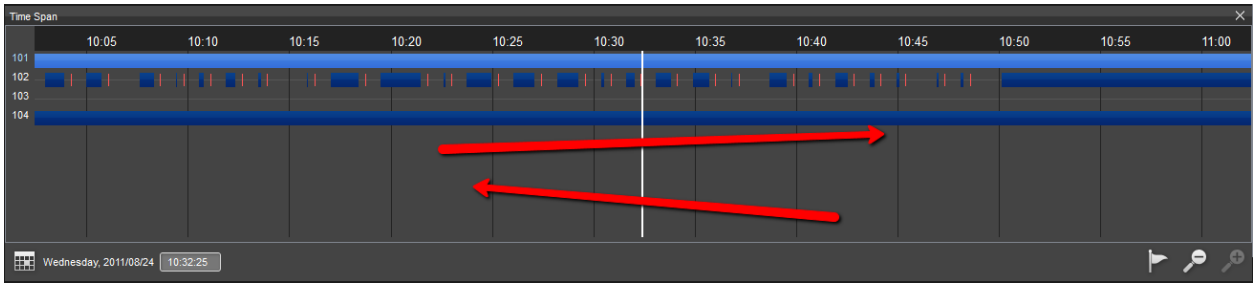
The timeline is a user-friendly interface to quickly find the video of a certain time period.



The featured settings are:

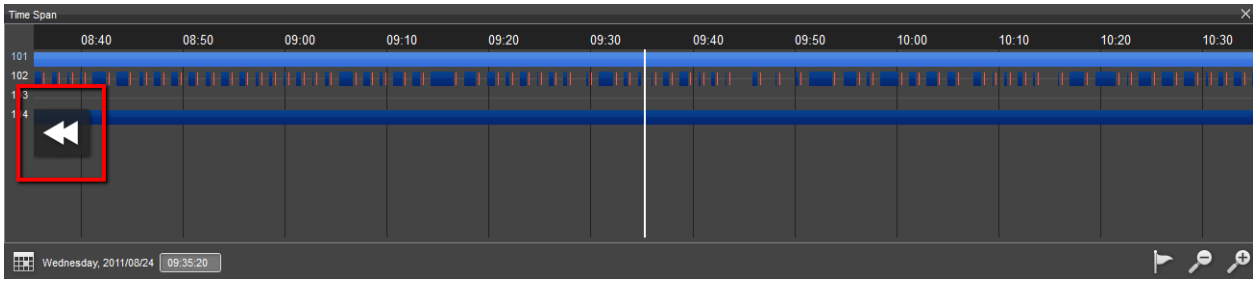
Graphic Button	Description
	Date/Time selection
	Event browsing settings
	Zoom out
	Zoom in

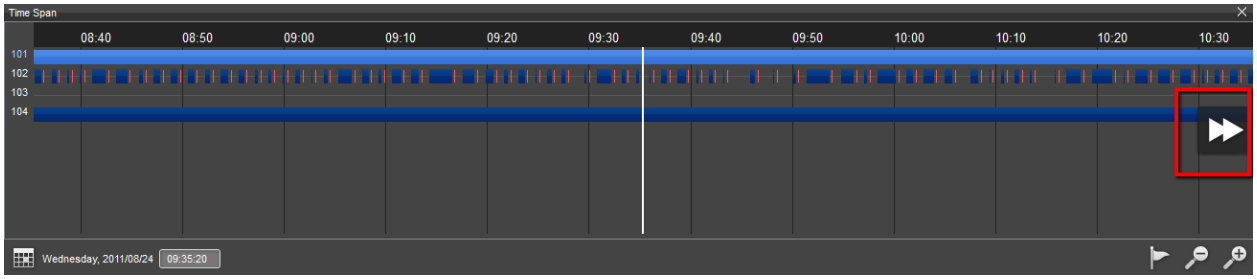
1. Drag the timeline to the time.



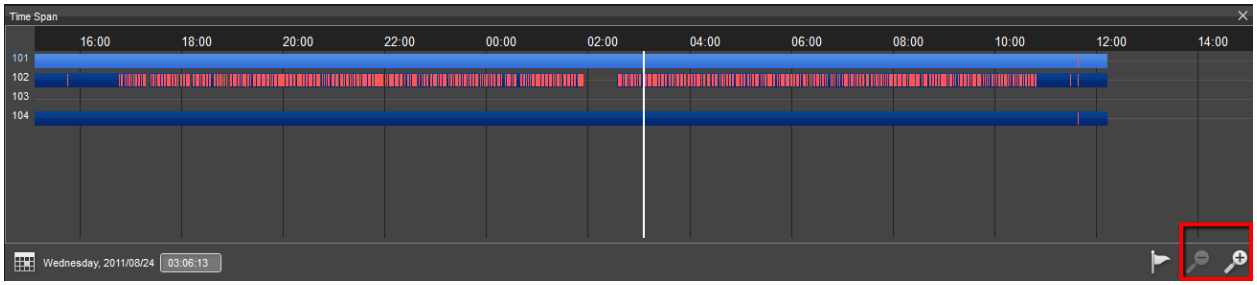
	If video content is an **image fusion**, as long as one camera has recording data, a timeline will be displayed in the area for the video content. It is possible that a camera has two video streams of different video profiles. If one camera is placed in two grid cells, two timelines will be drawn for each grid cell.

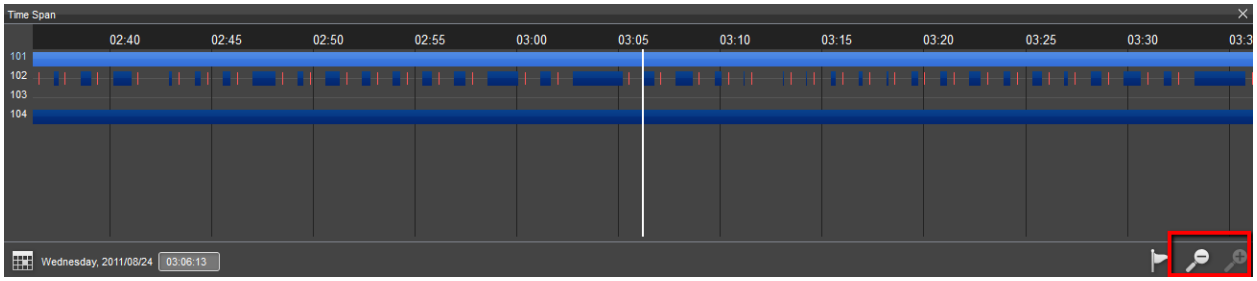
2. When mouse is hovering on both the ends of the timeline, an arrow icon will show up. Click on it will browse through time more quickly.



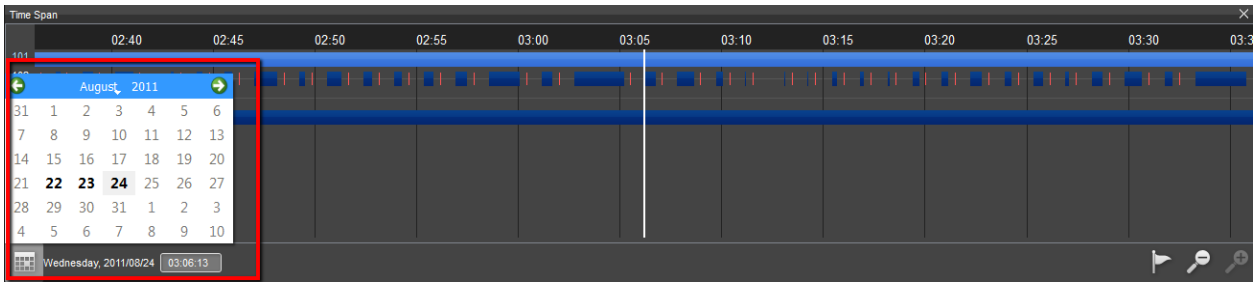


3. The two icons in the corner zoom in and out the timeline.

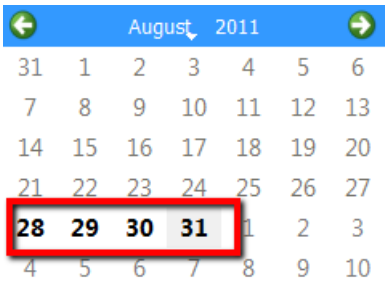


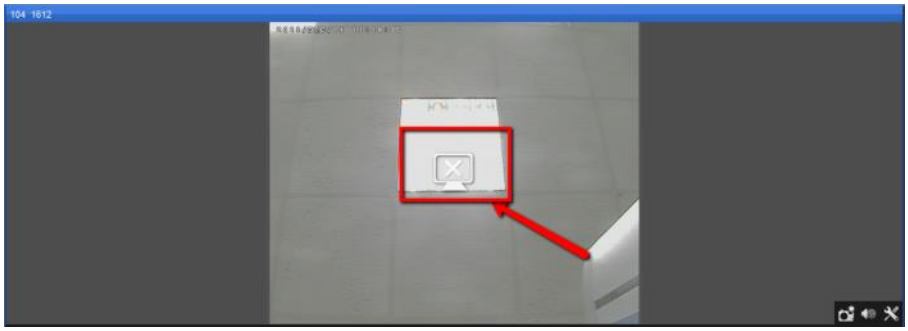


4. Specify the date / time directly using the widget in the corner.



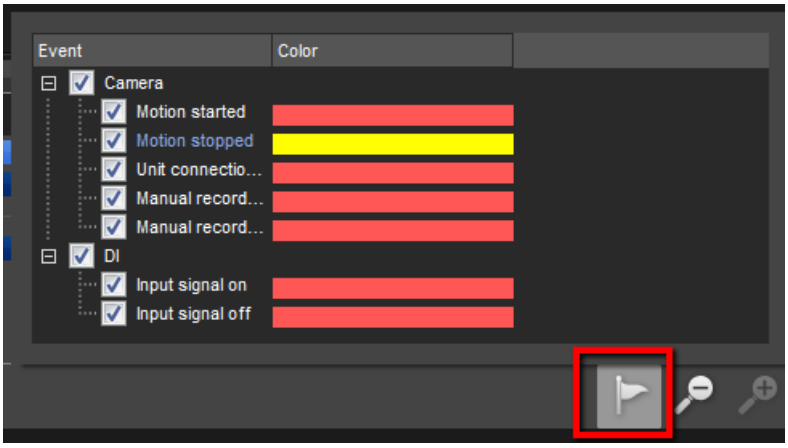
5. The dates with recording data are shown in boldface.



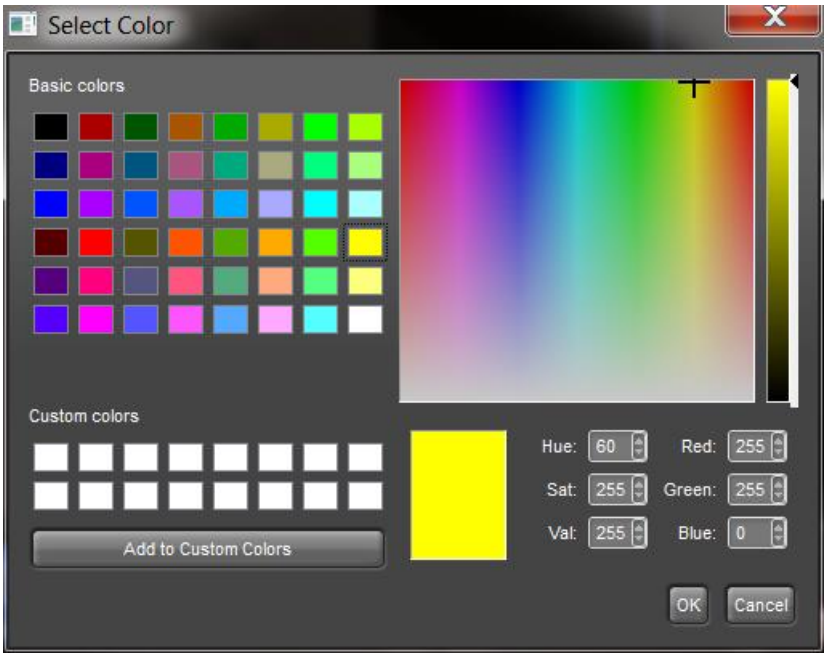
	If a channel does not have recorded at specified time points, a no-video icon will display in the channel. 

	If a camera is dragged into the playback grid, the same camera will appear in the grid when you switch to LiveView tab.

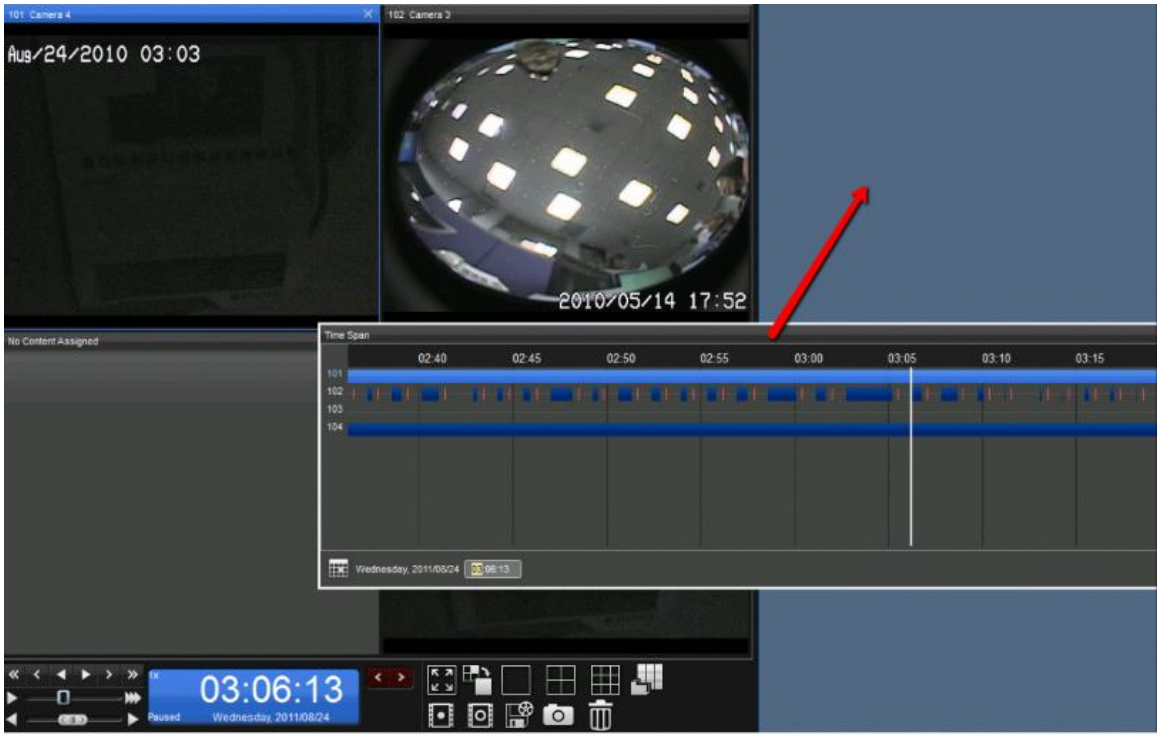
6. Change event browsing settings. In Timeline, event-triggered recording data can be shown in different colors. Locate video files more quickly by enabling event browsing in different colors. If you uncheck the event items in the list, the markers of event video will not be shown in Timeline.

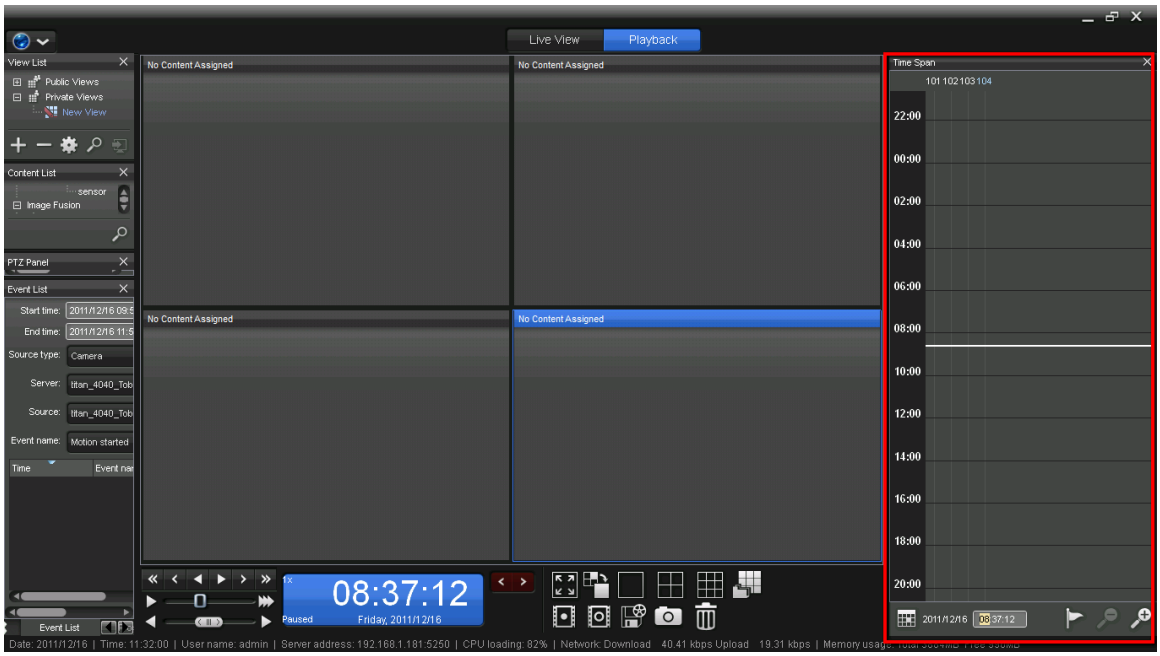


Click on the color bars will open the color palette.



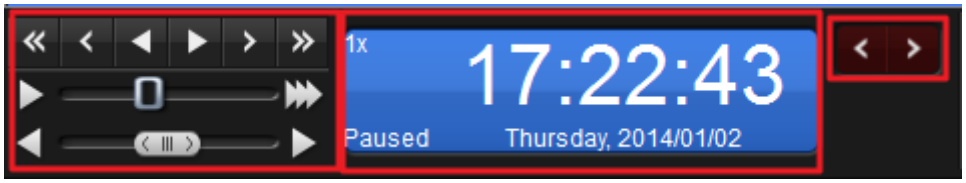
7. You may change the layout of the timeline if using the horizontal layout is not convenient.


101 Camera 4
Aug/24/2010 03:03
102 Camera 3
2010/05/14 17:52
No Content Assigned
Time Span
02:40
02:45
02:50
02:55
03:00
03:05
03:10
03:15
101
102
103
104
Wednesday, 2011/08/24
03:06:13
Paused
Wednesday, 2011/08/24

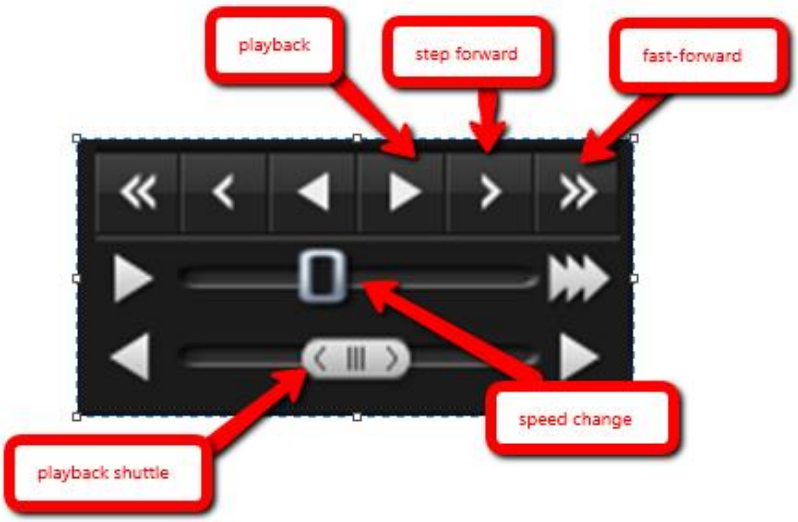

Live View
Playback
View List
Public Views
Private Views
New View
Content List
sensor
Image Fusion
PTZ Panel
Event List
Start time:
End time:
Source type:
Camera
Server:
Source:
Event name:
Motion started
Time
No Content Assigned
No Content Assigned
No Content Assigned
No Content Assigned
Time Span
101 102 103 104
22:00
00:00
02:00
04:00
06:00
08:00
10:00
12:00
14:00
16:00
18:00
20:00
08:37:12
Paused
Friday, 2011/12/16
2011/12/16
08:37:12
Event List
Date: 2011/12/16 | Time: 11:32:00 | User name: admin | Server address: 192.168.1.181:5250 | CPU loading: 82% | Network: Download 40.41 kbps Upload 19.31 kbps | Memory usage:

14.9 Time Navigation

The time navigation panel can be divided into four different parts which are, from left to right, playback control, the date/time display, and event browsing control.



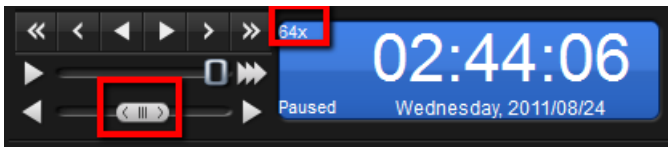
14.9.1 The Playback Control



The featured settings are:

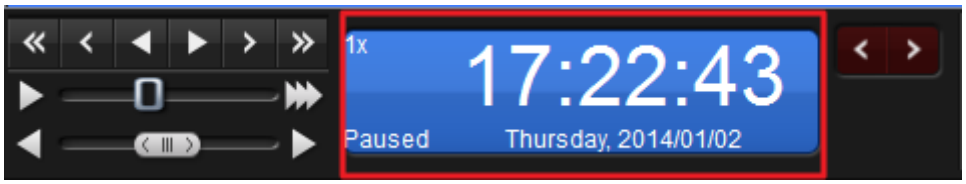
Setting	Description
Playback / Reverse Playback	Click to plays videos. When video is being reversely played, the focused channel will play according to the specified frame rate, and the unfocused channels will play at 20 frames per second.
Step forward/backward	Click to play one frame next/last to the current frame.
Next/Previous	Click to set the current frame to that one in next/last interval. ▸ See also the Playback of **Client Configuration**.

Speed	Click to change alter the speed from 1/16x to 64x.
Speed Shuttle	Click to quickly scan through video forwards or backwards. The speed can be adjusted by dragging the handle. For example, when you drag the handle towards the right-hand side, forward playback will start. The playback speed is determined how far away the handle is from the original position. If you drag the handle towards the left-hand side, reverse playback will start.



	If video is being played at a faster speed, the audio will not be heard.

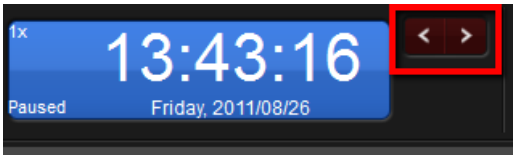
14.9.2 The Date / Time Display



It shows the playback status, the date/time of the current video frame, the speed of playback.

14.9.3 Event browsing control

The event browsing control is a quick interface for you to move between the time points when event occurs.



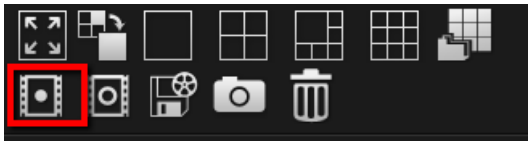
The featured settings are:

Graphic Button	Description
	Moves to the previous event.
	Move to the next event

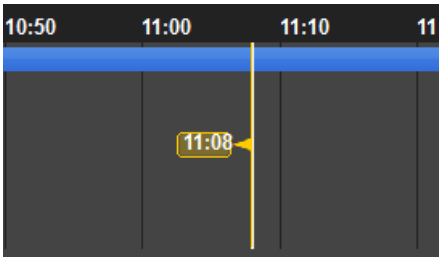
14.10 Export Video

Video exporting is a tool for converting the video of a specified time span into commonly-used video formats so that the video can be played with other video player applications, such Windows Media Player and VLC.

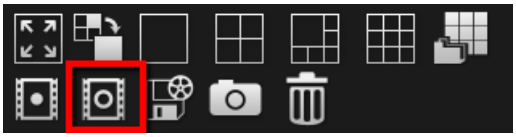
1. Click on the cue-in icon.



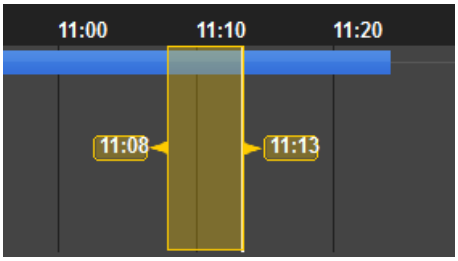
2. You will see an icon on the timeline indicating the start of the video to be exported.



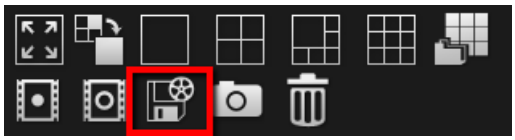
3. Click on the cue-out icon.



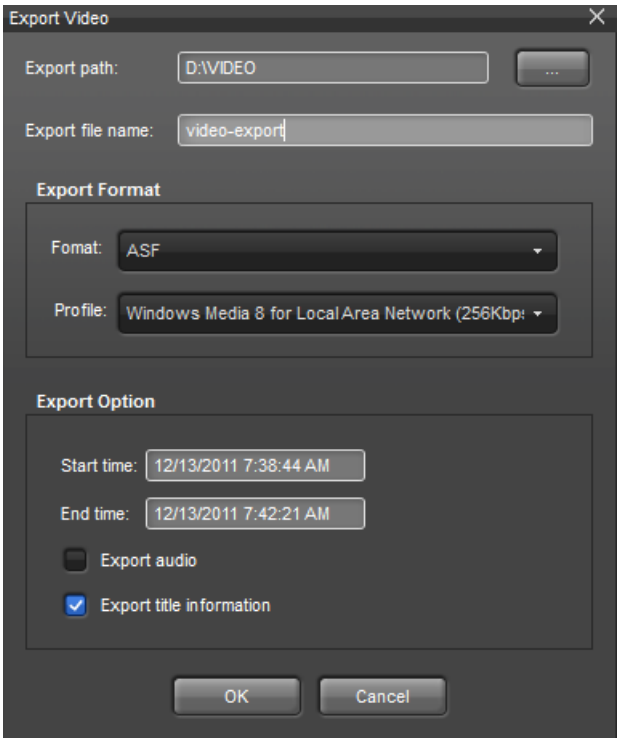
4. You will see the icon indicating the end of the video. And the edges of start time and end time are draggable. You may drag them to modify start time and end time.



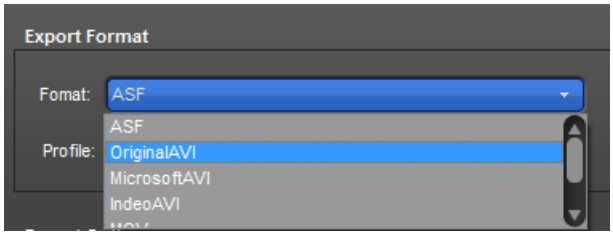
5. Click on the export icon.



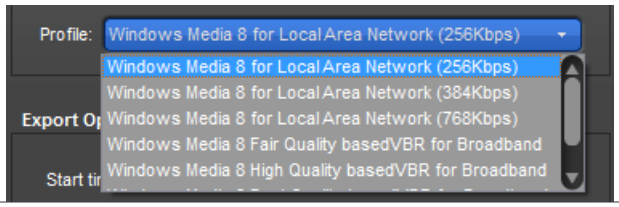
6. A dialog will be opened to ask for the parameters to configure the video to be exported. The supported video formats are **ASF**, **Original AVI**, **and Microsoft AVI**. You may enable “Export audio” and “Export title information”. They are not enabled by default.



	The maximum filename length of export files is 64 characters.
	If there is a video format change in your selections, NuClient will save video data of different formats in different files and number them properly.
	The start time and the end time are modifiable in the export dialog. You may click on the numbers you feel like changing and press KEY UP and KEY DOWN.

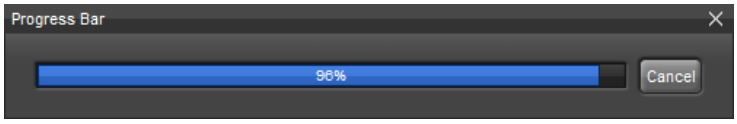


If the export format is **ASF**, you can choose different video profiles.


Profile:
Windows Media 8 for Local Area Network (256Kbps)
Windows Media 8 for Local Area Network (256Kbps)
Windows Media 8 for Local Area Network (384Kbps)
Windows Media 8 for Local Area Network (768Kbps)
Windows Media 8 Fair Quality basedVBR for Broadband
Windows Media 8 High Quality basedVBR for Broadband

If you run NuClient on Mac OS X, you may also export video in **MJPEG**.

7. After OK is pressed, the video will be exported and can be seen in the target folder when the exporting is completed.



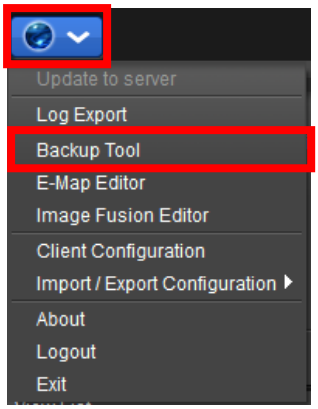
14.11 Backup Video

Backup is a utility for exporting video in its original format without any format conversion. It is different than exporting video. The format of video is not converted in video backup.

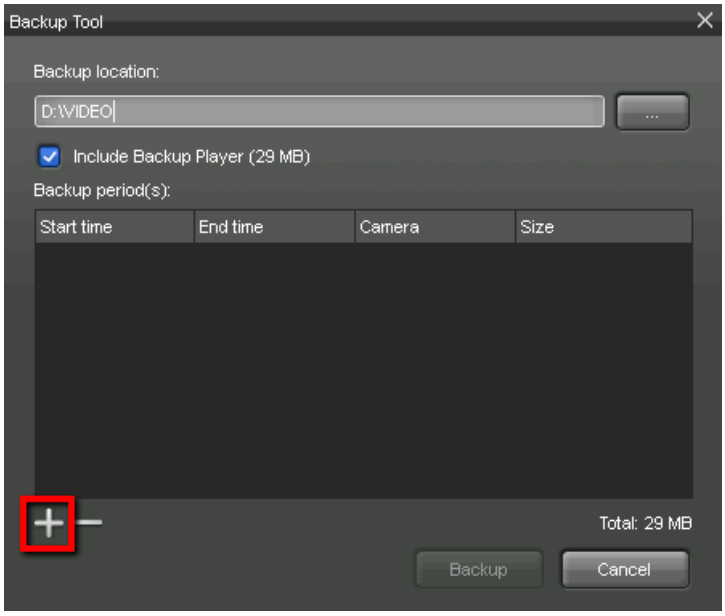
1. Access NuClient

2. From the **Top Toolbar** of the **NuClient**, click the “global” icon .

   The menu opens.

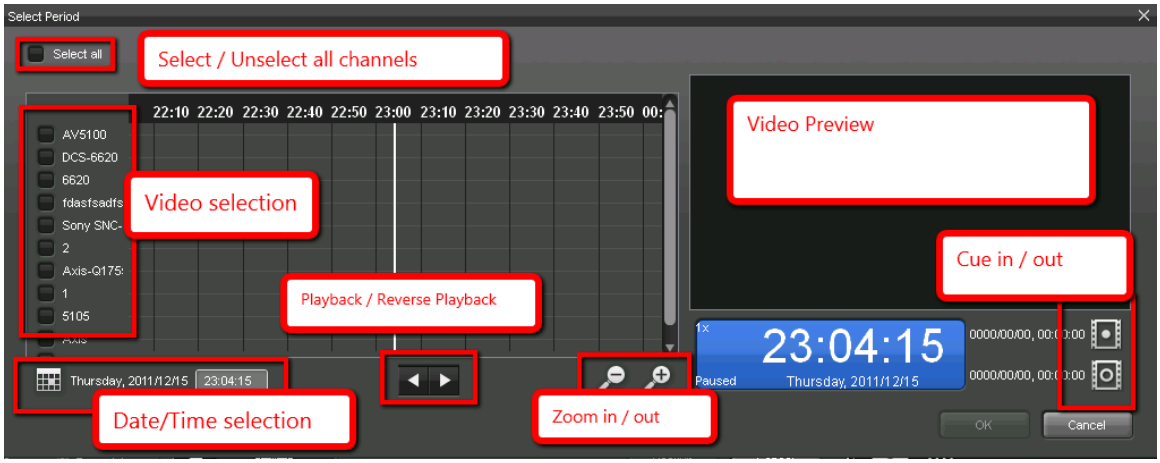


3. Press the **Add Period** icon in the corner of the opened dialog.

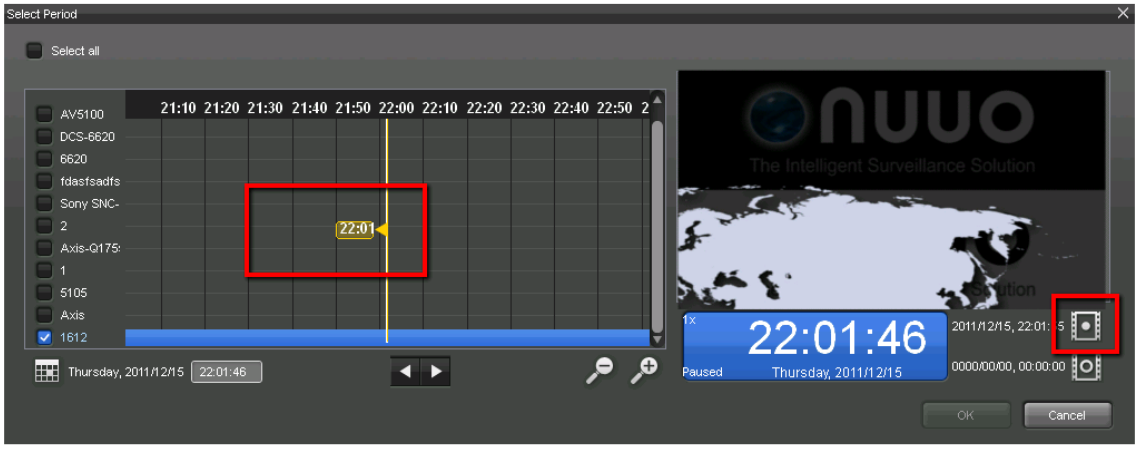


4. After the icon is pressed, a timeline dialog will open.

5. The interface is quite similar to the timeline in the Playback interface.



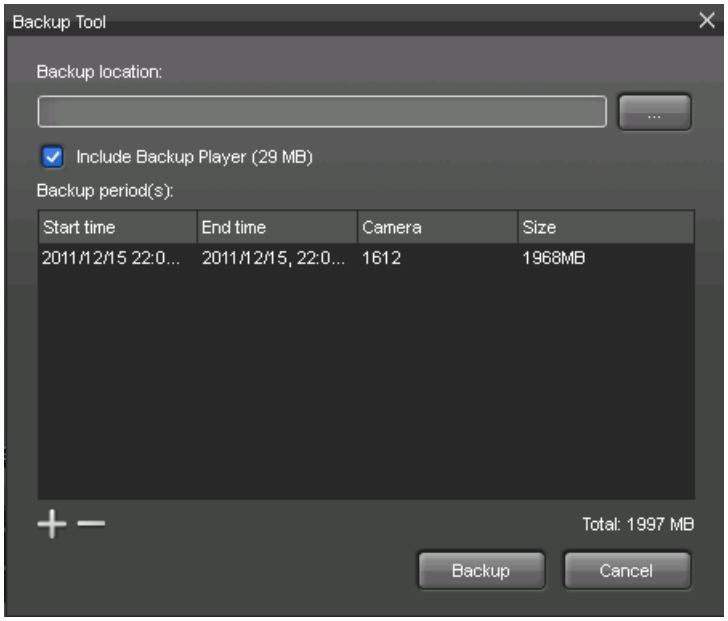
6. Select a camera and specify the cue-in time.



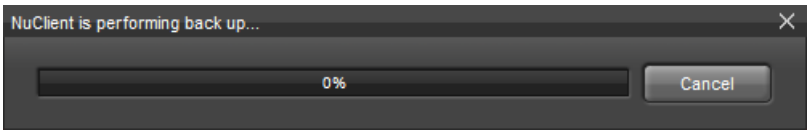
7. Select a camera and specify the cue-out time. Click the OK button when the selection is done.

8. In the list, you may find the list of selected video data. Clicking OK will start backing up the video data.

9. If you have "**Include Backup Player**" enabled, then you will find **Backup Player** in the exported folder. You may playback video files using the playback application.



10. With the camera video to be exported and the cue-in/out time specified, the original video files will be exported to the target folder.



11. When it is completed, you will find video files in the backup directory. If you have **Include Backup Player** enabled, you will also find a playback application in the directory.

14.12 Snapshot / Print

See the section of Snapshot for details.

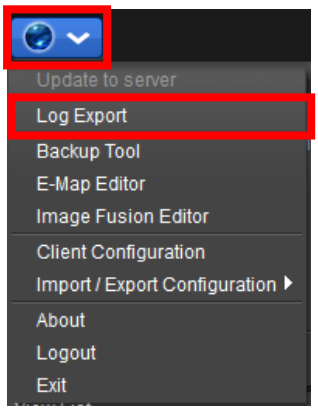
15. Log Export

Whether the **Crystal** is serving as a **Management Server**, **Recording Server** or **Metadata Server**, follow the guide below to export the log recorded during a period of time:

1. Access **NuClient**.

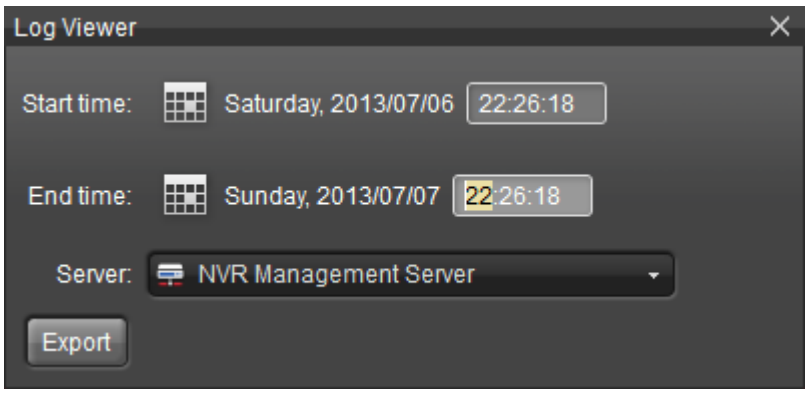
2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.



3. Click **Log Export**.

   A **Log Viewer** dialog opens.



   The featured settings are:

Setting	Description
Start time	Sets the moment from which the log to export starts ▸ Click the calendar icon to open a calendar for date selection.

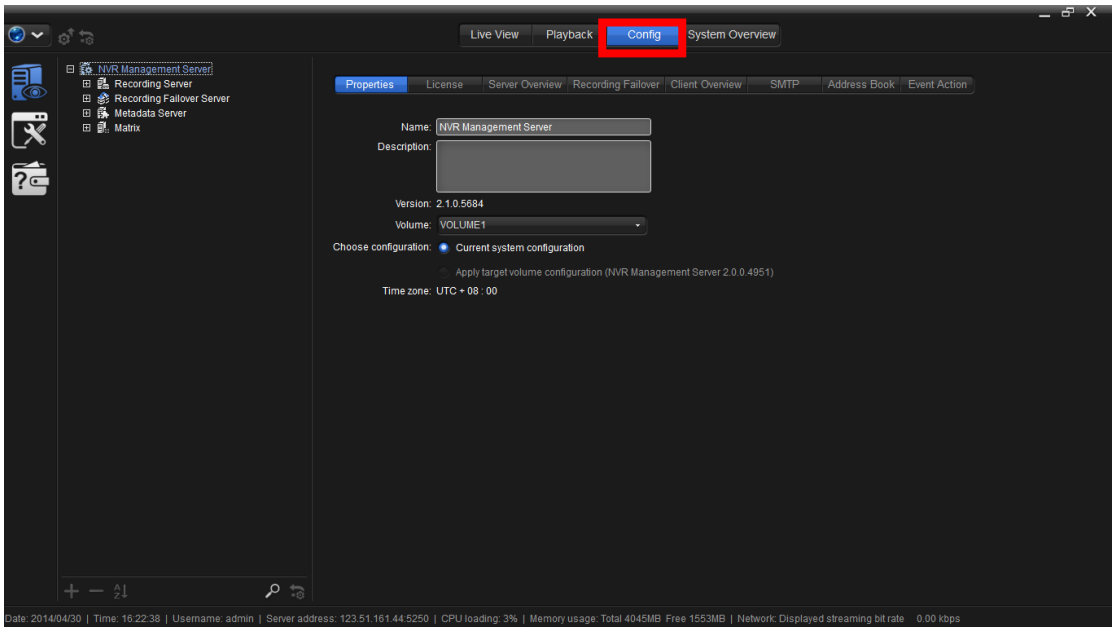
End time	Sets the moment at which the log to export stops. ▸ Click the calendar icon to open a calendar for date selection.
Server	Sets which server to collect the log. ▸ Options available are: **NVR Management Server**, **NVR Recording Server** and **NVR Metadata Server**.
Export button	Opens a **Log file path** window to browse where to export the log file. ▸ The log file are saved as *.csv file.

16. Config Export

The **Export Config** tool is featured to save the **NuClient's** configuration to a file so such file can be loaded to recover the system configuration in a painless manner. This will save users from spending great time and efforts in reconstituting the system configuration.

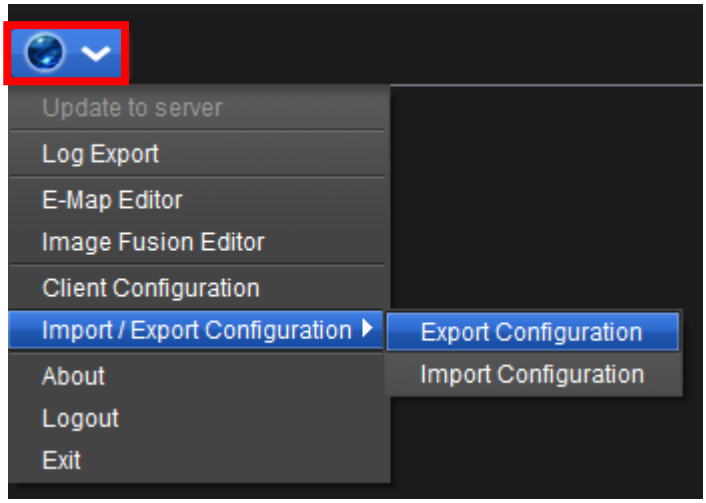
To use the **Export Config** tool:

1. Access **NuClient, Config** tab.



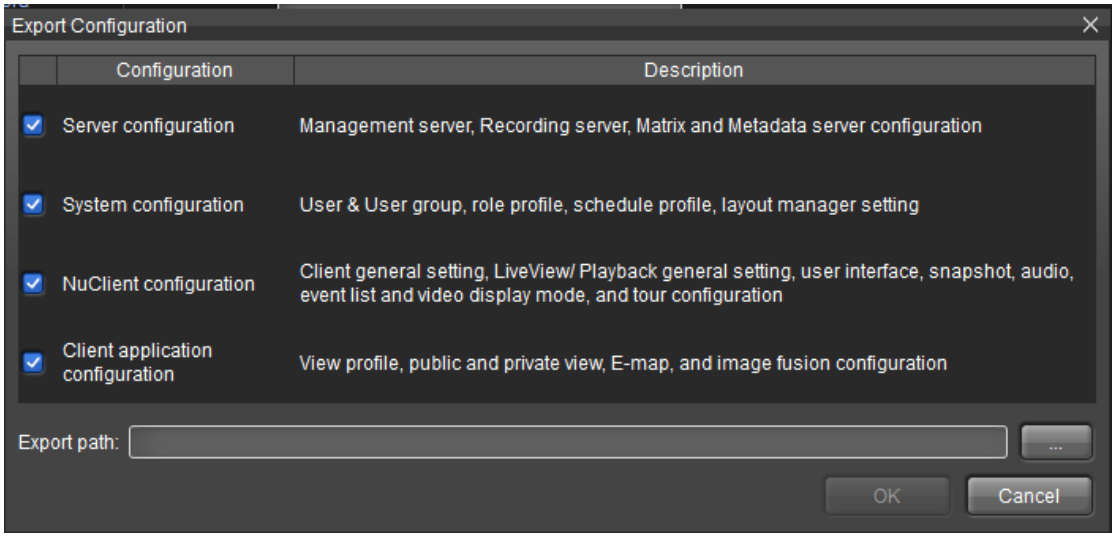
2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.



3. Click Import/ Export Configuration and click Export configuration

The **Export Config** tool launches.

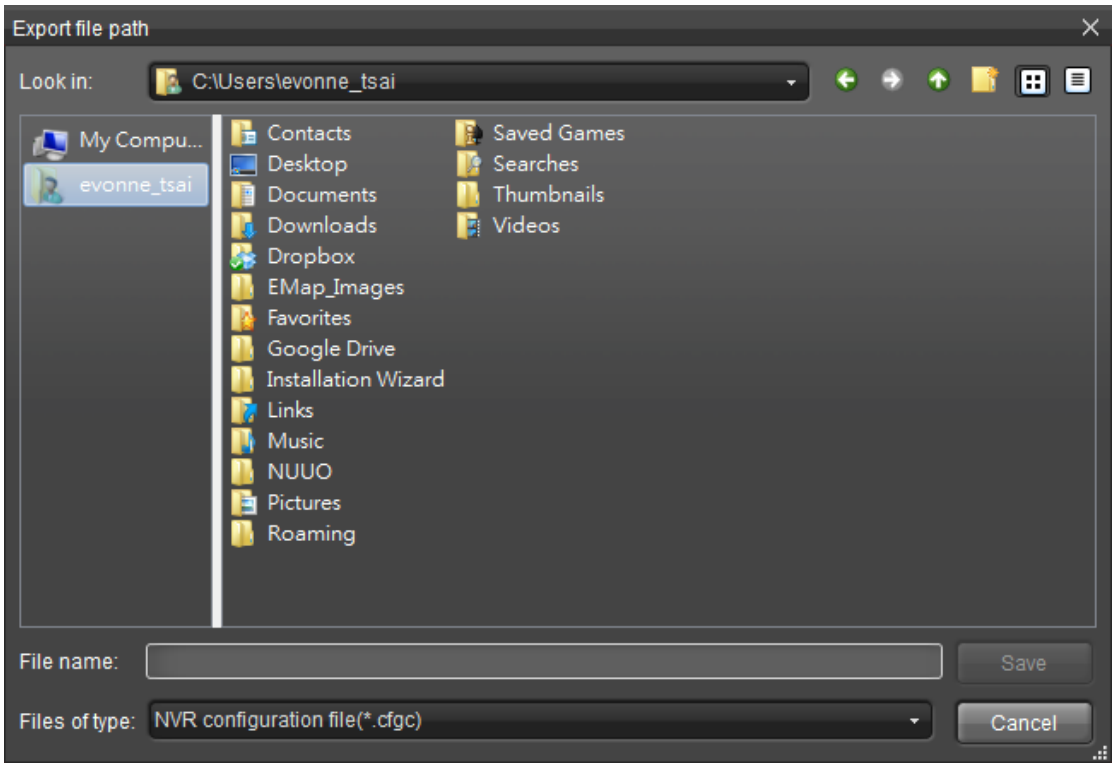

Export Configuration
Configuration
Description
Server configuration
Management server, Recording server, Matrix and Metadata server configuration
System configuration
User & User group, role profile, schedule profile, layout manager setting
NuClient configuration
Client general setting, LiveView/ Playback general setting, user interface, snapshot, audio, event list and video display mode, and tour configuration
Client application configuration
View profile, public and private view, E-map, and image fusion configuration
Export path:
...
OK
Cancel

4. Select the configuration to save.

	It is suggested that all types of configuration be export and import simultaneously to ensure the configuration is intact.
	Before export configuration, please commit all modifications to make sure the exported configuration is up to date.
	Due to privilege control, user on Live View and Playback tab can only export NuClient configuration.

5. Click the ellipsis (…) button at the right side of the **Export path** field.

   An explorer window opens.



6. Browse where to save the configuration file.

7. Enter a name for the configuration file in the **File name** field. Click the **Save** button.

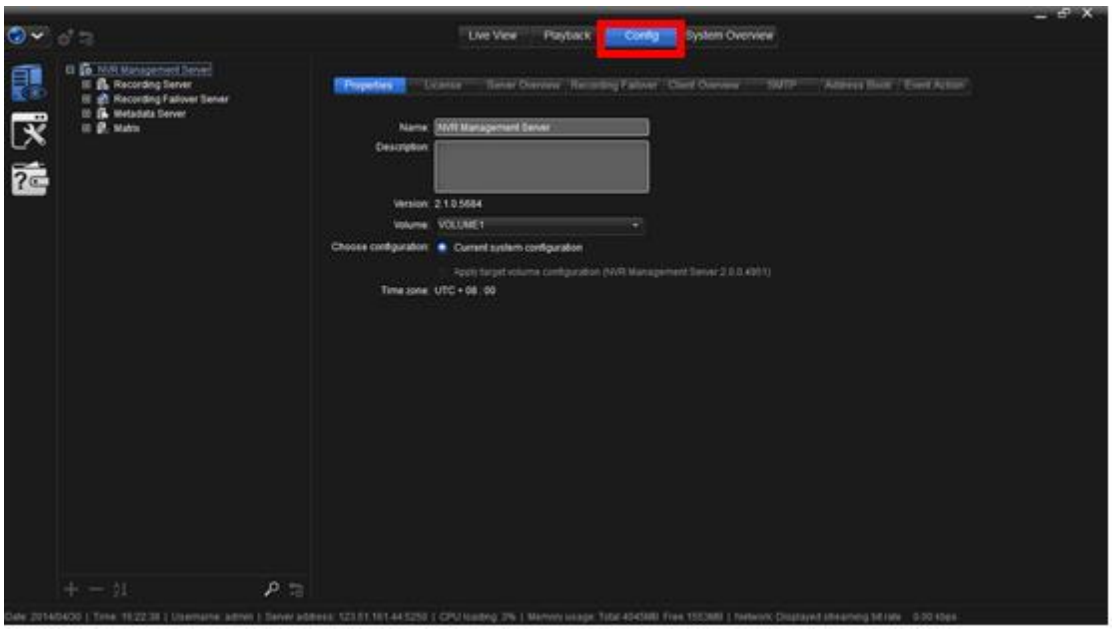
   The selected configuration is saved as one *.zip file at the assigned folder.

17. Config Import

The **Import Config** tool is featured to load a copy of the **NuClient'**s configuration saved as a file in the disk drive so it is painless to reconstitute the system configuration.

To use the **Import Config** tool:

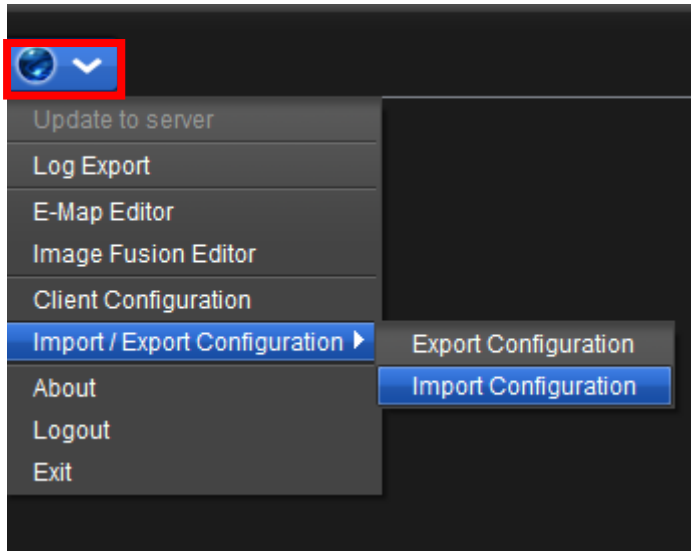
1. Access **NuClient**, **Config** tab.



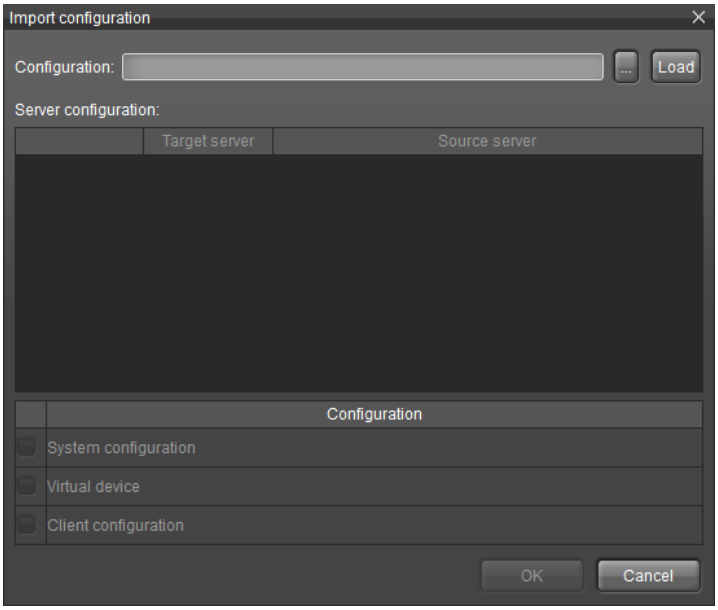
2. From the **Top Toolbar** of the **NuClient**, click the "global" icon .

   The menu opens.

3. Click Import/ Export Configuration and click Import Configuration



   The **Import Config tool** launches.

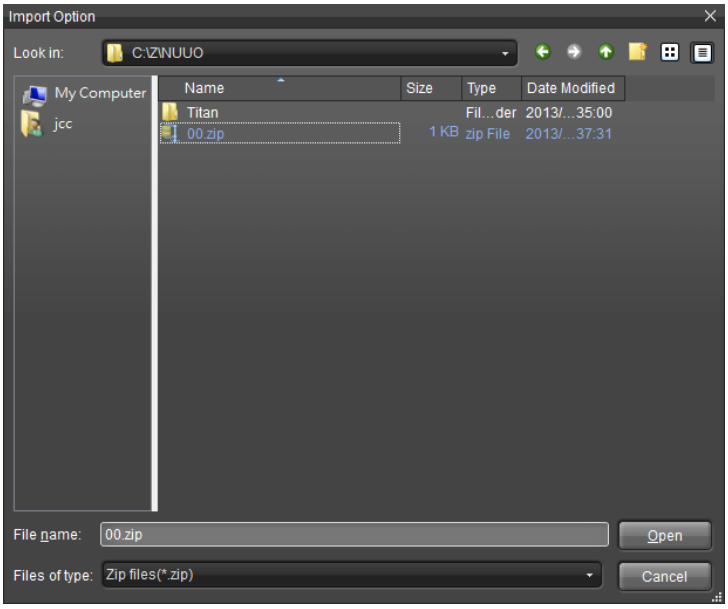


4. Click the ellipsis (…) button at the right side of the **Configuration** field.

   An explorer window opens.

5. Browse for the saved configuration file. Click the configuration file.

   The configuration file becomes highlighted.

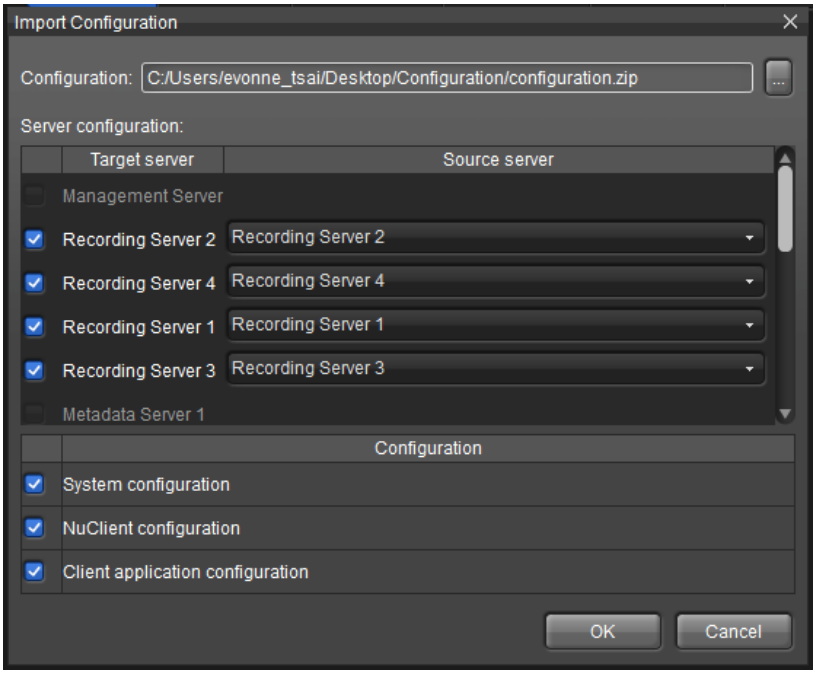


6. Click the **Open** button at the right side of the **File name** field.

   The explorer window closes.

7. Click the **Load** button at the right side of the **Configuration** field.
   The available configuration(s) then shows in the lower half of the **Import Config** tool.

	Please export all types of configuration and import simultaneously to ensure the configuration is intact.



8. Select the configuration to load and deselect the configuration that you don't want to load.

9. Click the **OK** button.

The selected configuration is imported to the system and replaced original configuration.

	The hardware between source server and target server is strongly suggested to be the same.
	It is suggested to import one server configuration into one target server. Please not import one server configuration into multiple target server.

18. Video Wall

To enlarge the management efficiency of big projects, NUUO NuMatrix, provides an advanced centralized viewing solution that supports unlimited channels of live viewing, without any monitor counts limitation per computer.

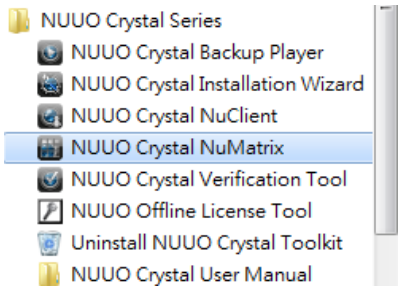
The followings are components.

Component	Description
NuMatrix application	Install in the computer as **Matrix Server**.
Matrix settings	The **Matrix Server** settings on NuClient-Config tab
Matrix Console	Control all monitors on **NuClient**
Matrix profile	A group of monitors and **Views** setting for monitoring efficiency

18.1 Matrix Application

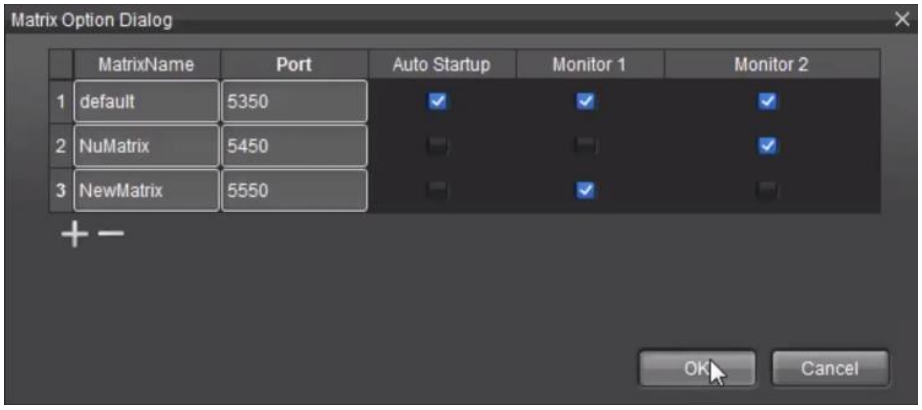
1. Install NuMatrix application on the computer as Matrix Server. For NuMatrix installation process refers to Application Installation.

2. On Windows, click “Start”, and then click NUUO Crystal NuMatrix to launch NuMatrix application.



3. Select instance name and click OK to launch NuMatrix.

4. Go to options for detail setting or add new NuMatrix application. For new NuMatrix application, assign a new port to differentiated different NuMatrix application.
   Then click on “OK”.



Setting	Description	Default
MatrixName	Names the **Matrix**.	“default”
Port	Provides port of the **Matrix**.	5350
Auto Startup	Start the Matrix automatically	Enable
Monitor 1	Show Matrix on Monitor 1	Enable

5. Then go to NuClient | Config tab| Physical Config| Matrix to add the NuMatrix Server to the system. For NuMatrix setting refer to Config Matrix.

6. For Matrix control priority and access privilege refer to Priority and Matrix.

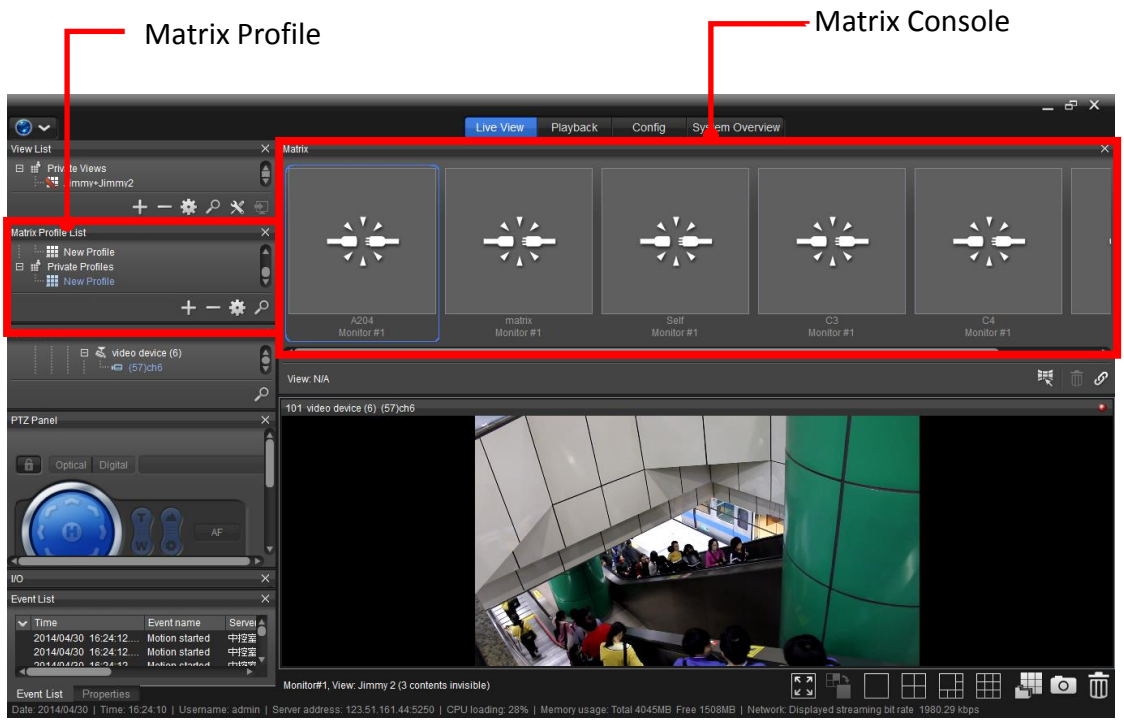
	Once installed NUUO Crystal™ NuMatrix application and go to Matrix config on NuClient, please make sure NUUO Crystal™ NuMatrix is still operating when add the Matrix Server on NuClient| Config.

18.2 Matrix Console

The Matrix console is the primary location for controlling the matrix display. It displays all the monitors you have added to the Management Server on your section of NuMatrix. Multiple monitors for one Matrix server setting are an available option. NuMatrix has no inherent limitation when it comes to the number of monitors.

For NuMatrix setting refer to Config Matrix.

	Please note that only when have an "Ultimate level" license will you be able to see the Matrix interface on NuClient.

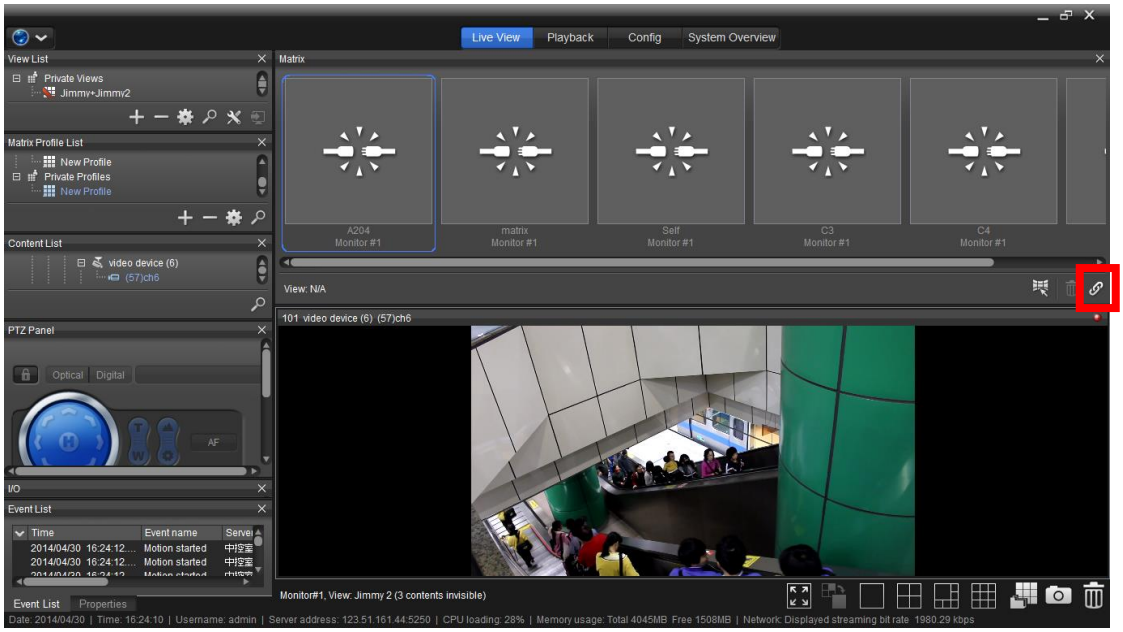


	Please note that metadata related video will not show on the NuMatrix.

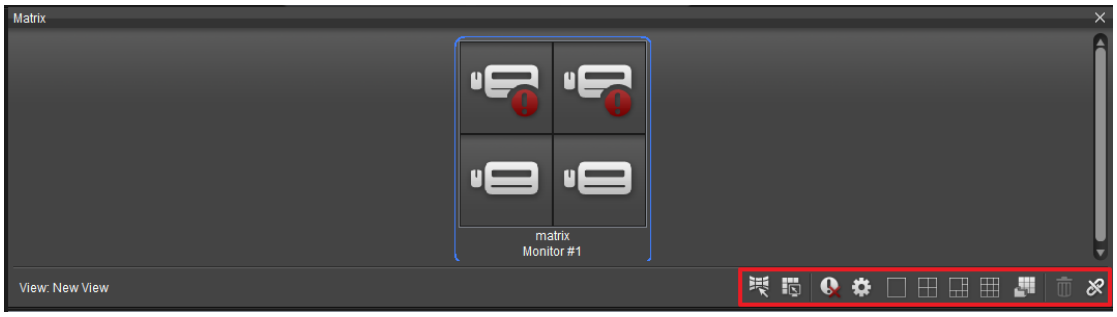
To launch Matrix console:

1. Connect to NuMatrix Server

   Focus on the NuMatrix application. Then click “Connect” on Matrix Console toolbar.

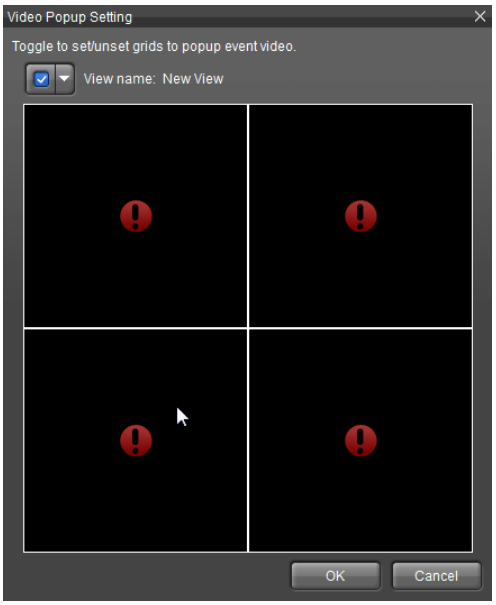


After connecting to the NuMatrix, the related icon will show on tool bar.

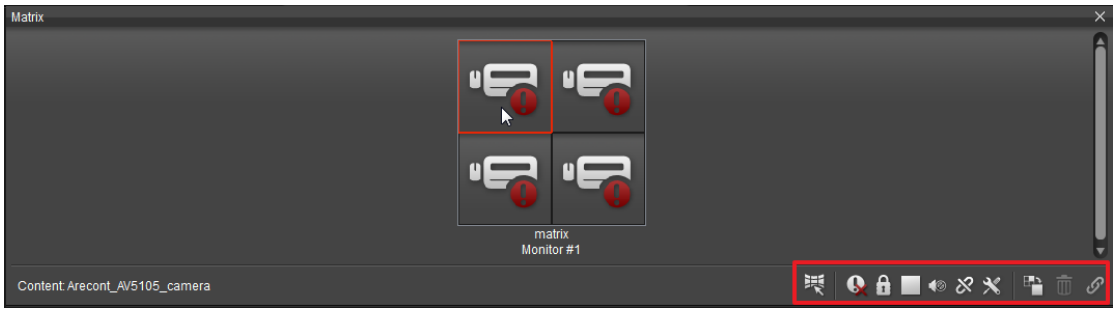


The featured settings are:

Graphic Button	Description
	Select Matrix Profile ▸ There are two options: Public profile and private profile
	Select View
	Close all Video Popup at once on this monitor. Must setup Video Popup Action beforehand on Config tab.
	Click to show Video Popup Setting. Toggle on the grid to assign the grid for video popup. Toggle again to un-choose the Video Popup grid. Must setup Video Popup Action beforehand on Config tab.

	 The assigned grid will show the notification on this setting page and show a red exclamation mark on tool bar of grid.
	The assigned favorite layout for quick switch layout. To set up favorite layout, go to **Client Configuration** | **General** | **Monitor Display** | **Select Favorite Layouts**
	Switch Grid Type
	Remove selected content
	Connect Matrix

After selecting one camera on the View, the related icon will show on tool bar.



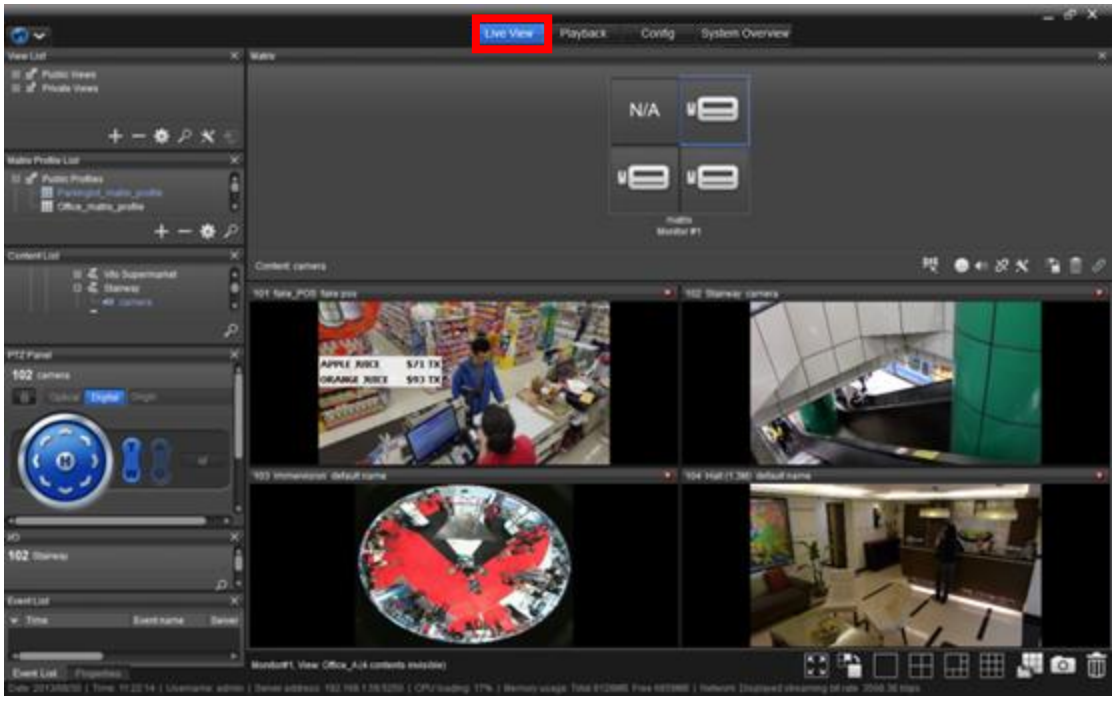
the featured settings are:

Graphic Button	Description

	Select Profile ▸ There are two options: Public profile and private profile once set on view list.
	Close all Video Popup at once on this monitor. Must setup Video Popup Action beforehand on Config tab.
	Click to lock the popup video. The locked video won't be closed even the event status has finished. Click again to Unlock the popup video.
	Start/stop Manual Recording
	Enables/disable audio
	Connect/disconnect
	Content Setting ▸ There are two options: stream profile or fixed profile. ▸ Select auto or original for stream profile.
	Single Grid
	Remove selected content
	Connect Matrix

18.2.1 Add camera to Matrix

1. Access the **Live View** tab.

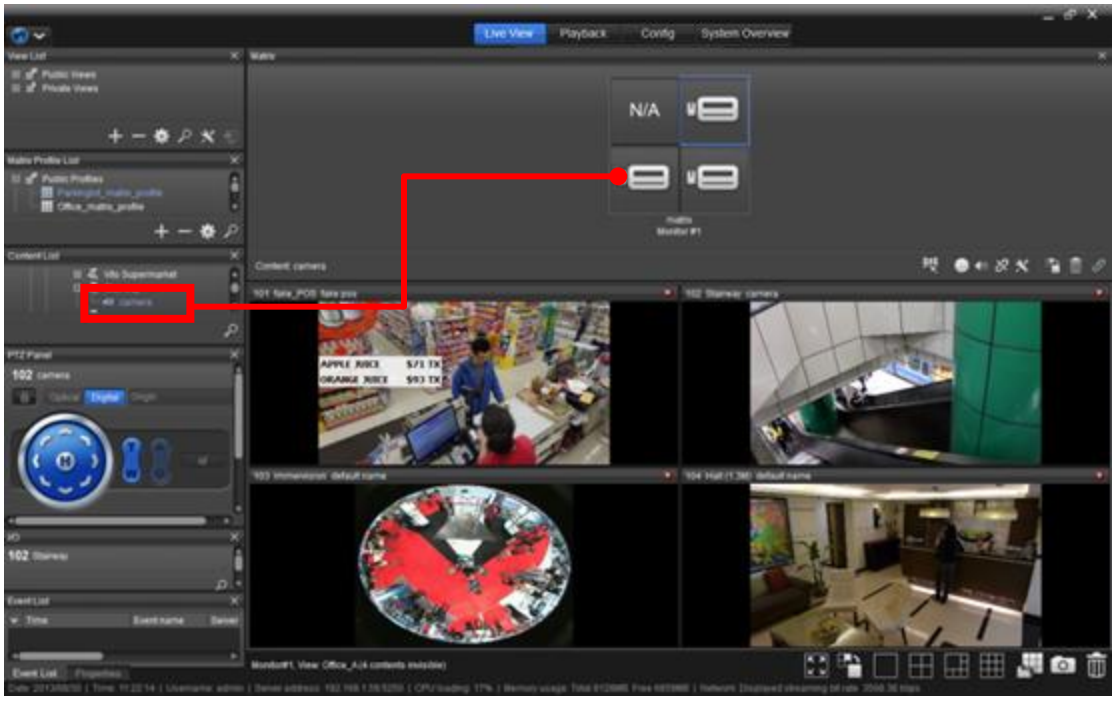


2. Click Content list.

   Drag and drop a single camera or a sensor to Matrix.

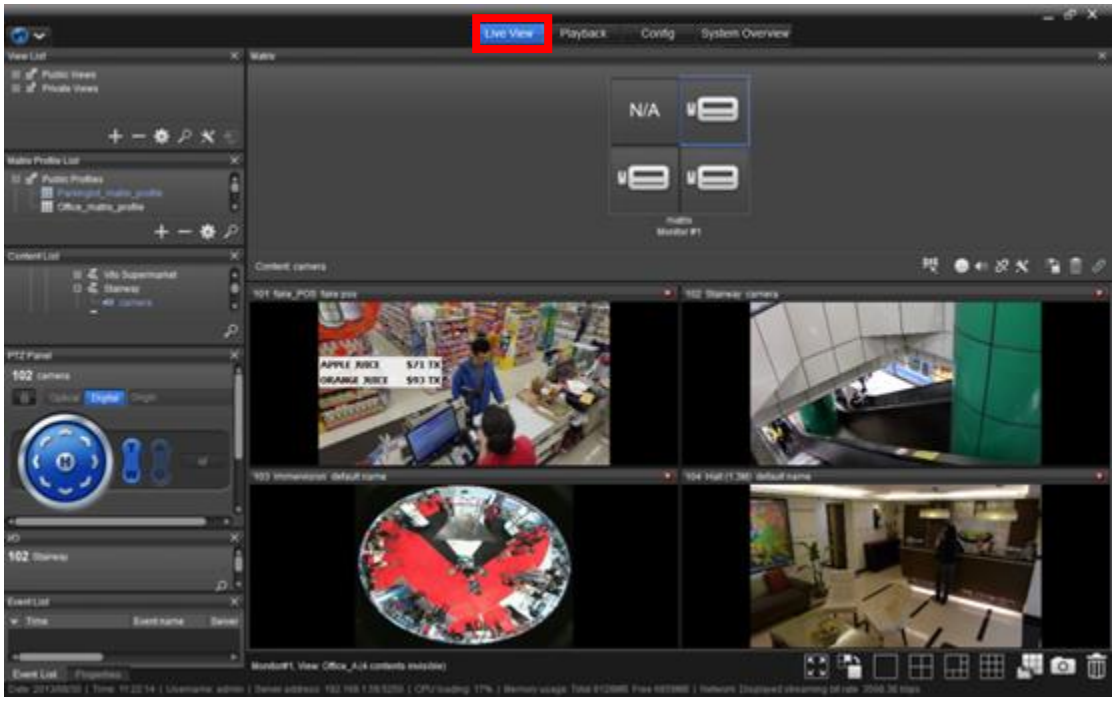
   OR

   Drag and drop a server to a grid cell.
   Then the camera's video will show in Matrix.



18.2.2 Add view to Matrix

1. Access the **Live View** tab.



2. Click View list.

   Drag and drop a private view or a public view to Matrix.

18.3 Matrix Profile List

The Matrix profile makes setting up multiple monitors and views more convenient. It consists of a group of settings for the “Monitors” plus “Views” enabling rapid switching of the viewing target.

	Please note that only when have an "Ultimate level" license will you be able to see the Matrix interface on NuClient**.**

To launch the **Matrix Profile List**:

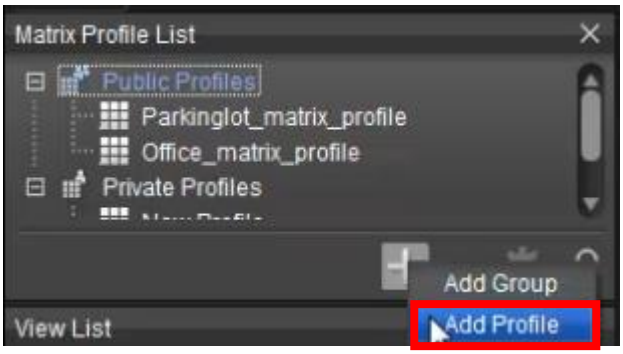
1. Access the **Live View** tab.

2. Click the **Matrix Profile list**

3. Select the type of profile, either Public or Private, to be created.

4. Click on the add sign icon **+**.

5. Click on **Add Profile**.



6. A new view named “New Profile” by default is appended to the root.

7. Drag a view to the matrix profile, view will fill up in the NuMatrix monitor.

8. NuMatrix monitor will display the view.

When select the view, the featured settings are:

Graphic Button	Description
	Select Profile ▸ There are two options: Public profile and private profile once set on view list.
	Select View
	View 1x1
	View 2x2
	View 1+5
	View 3x3
	Switch Grid Type
	Remove selected content

	Connect Matrix

When select the camera, the featured settings are:

Graphic Button	Description
	Select Profile ▸ There are two options: Public profile and private profile once set on view list.
	Select View
	Start/stop Manual Recording
	Enables/disable audio
	Connect/disconnect
	Content Setting ▸ There are two options: stream profile or fixed profile. ▸ Select auto or original for stream profile.
	Single Grid
	View 1x1
	View 2x2
	View 1+5
	View 3x3
	Switch Grid Type
	Remove selected content
	Connect Matrix

19. Help

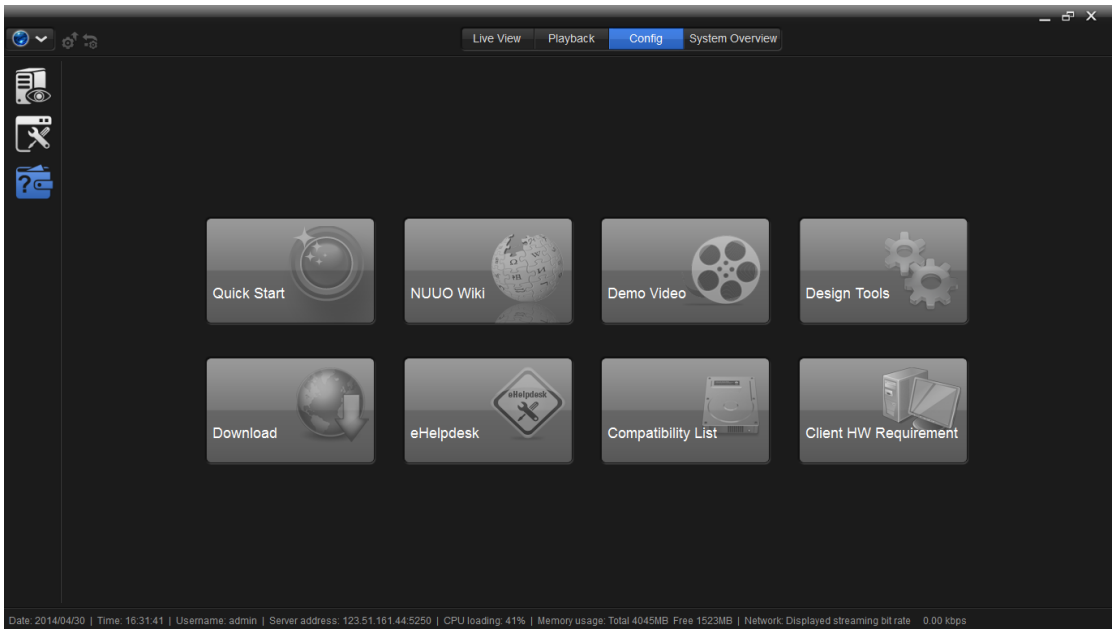
To use the **Help**:

1. Open the **NuClient** settings as described in Settings.

   The **NuClient** settings open.

2. Click the **Help** icon from the **Config Catalog**.

   The **Help** then opens onscreen and shows the useful tools.



Setting	Description
Quick Start	The quick start document helps to start the system.
NUUO Wiki	The useful Q&A helps to install the system.
Demo Video	The demo video helps to install the system.
Design Tools	The design tools help to design the system.
Download	The download helps to download latest firmwave for the system.
eHelpdesk	The eHelpdesk helps to reply any issue to install or process the system.
Compatibility List	The compatibility list helps to provide latest compatibility list with other device(s).

Client Hardware Requirement	The Client Hardware Requirement helps to design the NuClient and NuMatrix system requirement.

Some Help information will be available when connect to Internet.